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Decision Tree Classification

Classification Accuracy

dtree pendigits_training pendigits_test optimized 50
classification accuracy=0.8382

dtree pendigits_training pendigits_test randomized 50
classification accuracy=0.6764

dtree pendigits_training pendigits_test forest3 50
classification accuracy=0.7556

Training Stage Output

optimized Full output of Training Data

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tree= 0, node=  3, feature=13, thr= 58.82, gain=0.483286
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tree= 0, node=  5, feature=10, thr= 39.22, gain=0.436020
tree= 0, node=  6, feature= 0, thr= 35.29, gain=0.493867
tree= 0, node=  7, feature= 8, thr= 56.86, gain=0.564373
tree= 0, node=  8, feature=14, thr= 60.78, gain=0.329737
tree= 0, node=  9, feature= 5, thr= 64.71, gain=0.429977
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tree= 0, node= 11, feature= 3, thr= 90.20, gain=0.476025
tree= 0, node= 12, feature=14, thr= 37.25, gain=0.194893
tree= 0, node= 13, feature=10, thr= 29.41, gain=0.405421
tree= 0, node= 14, feature=14, thr= 96.08, gain=0.511200
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tree= 0, node= 23, feature= 7, thr= 77.10, gain=0.283783
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ID= 3489, predicted=  2, true=  7, accuracy=0.00
ID= 3490, predicted=  2, true=  2, accuracy=1.00
ID= 3491, predicted=  5, true=  5, accuracy=1.00
ID= 3492, predicted=  8, true=  5, accuracy=0.00
ID= 3493, predicted=  4, true=  4, accuracy=1.00
ID= 3494, predicted=  2, true=  2, accuracy=1.00
ID= 3495, predicted=  0, true=  0, accuracy=1.00
ID= 3496, predicted=  0, true=  0, accuracy=1.00
ID= 3497, predicted=  4, true=  4, accuracy=1.00
classification accuracy=0.8382
```

randomized Full output of Training Data

```
tree= 0, node=  1, feature= 9, thr= 29.41, gain=0.277800
tree= 0, node=  2, feature= 8, thr= 45.10, gain=0.221224
tree= 0, node=  3, feature= 4, thr= 43.14, gain=0.355468
tree= 0, node=  4, feature= 1, thr= 98.53, gain=0.253956
tree= 0, node=  5, feature= 0, thr=  7.84, gain=0.417586
tree= 0, node=  6, feature= 3, thr= 62.75, gain=0.278744
tree= 0, node=  7, feature= 9, thr= 57.45, gain=0.358601
tree= 0, node=  8, feature= 7, thr= 14.82, gain=0.343366
tree= 0, node=  9, feature= 7, thr= 13.65, gain=0.314013
tree= 0, node= 10, feature= 7, thr= 49.33, gain=0.121848
tree= 0, node= 11, feature= 1, thr= 97.69, gain=0.300887
tree= 0, node= 12, feature= 3, thr= 49.84, gain=0.115896
tree= 0, node= 13, feature= 9, thr= 61.57, gain=0.183240
tree= 0, node= 14, feature= 7, thr= 23.53, gain=0.267287
tree= 0, node= 15, feature= 0, thr=  1.96, gain=0.292009
tree= 0, node= 16, feature= 7, thr=  4.12, gain=0.047647
```

```
tree= 0, node= 17, feature= 2, thr=  7.84, gain=0.105574
tree= 0, node= 18, feature= 8, thr= 11.22, gain=0.026340
tree= 0, node= 19, feature= 5, thr= 71.98, gain=0.078053
tree= 0, node= 20, feature= 1, thr= 99.24, gain=0.072658
tree= 0, node= 21, feature= 8, thr= 59.76, gain=0.060789
tree= 0, node= 22, feature= 3, thr= 81.06, gain=0.370119
tree= 0, node= 23, feature= 9, thr=  4.55, gain=0.383824
tree= 0, node= 24, feature= 3, thr= 42.27, gain=0.047269
tree= 0, node= 25, feature= 7, thr= 58.82, gain=0.513883
tree= 0, node= 26, feature= 8, thr= 37.25, gain=0.155605
tree= 0, node= 27, feature= 8, thr= 96.08, gain=0.101290
tree= 0, node= 28, feature= 3, thr= 31.51, gain=0.099440
tree= 0, node= 29, feature= 8, thr= 62.75, gain=0.239167
tree= 0, node= 30, feature= 7, thr= 78.82, gain=0.186034
tree= 0, node= 31, feature= 9, thr= 65.41, gain=0.071425
tree= 0, node= 32, feature= 0, thr= 39.22, gain=0.140076
tree= 0, node= 33, feature= 0, thr= 60.78, gain=0.364487
tree= 0, node= 34, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 35, feature= 8, thr= 15.88, gain=0.127921
tree= 0, node= 36, feature= 1, thr= 99.02, gain=0.001248
tree= 0, node= 37, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 38, feature= 5, thr= 58.45, gain=0.026676
tree= 0, node= 39, feature= 6, thr= 39.22, gain=0.639190
tree= 0, node= 40, feature= 6, thr= 66.65, gain=0.052867
tree= 0, node= 41, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 42, feature= 3, thr= 92.47, gain=0.417942
tree= 0, node= 43, feature= 7, thr= 53.18, gain=0.050077
tree= 0, node= 44, feature= 4, thr= 30.98, gain=0.186113
tree= 0, node= 45, feature= 0, thr= 36.86, gain=0.191901
tree= 0, node= 46, feature= 3, thr= 88.39, gain=0.091513
tree= 0, node= 47, feature= 9, thr= 15.35, gain=0.133191
tree= 0, node= 48, feature= 8, thr= 66.67, gain=0.281595
tree= 0, node= 49, feature= 0, thr= 74.51, gain=0.231697
tree= 0, node= 50, feature= 2, thr= 25.71, gain=0.214492
tree= 0, node= 51, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 52, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 53, feature= 0, thr= 86.27, gain=0.229175
tree= 0, node= 54, feature= 6, thr= 98.04, gain=0.261420
tree= 0, node= 55, feature= 6, thr= 48.88, gain=0.058978
tree= 0, node= 56, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 57, feature= 6, thr=  3.45, gain=0.092320
tree= 0, node= 58, feature= 5, thr= 90.39, gain=0.079476
tree= 0, node= 59, feature= 2, thr= 50.98, gain=0.058681
tree= 0, node= 60, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 61, feature= 9, thr= 65.41, gain=0.067825
tree= 0, node= 62, feature= 5, thr= 90.20, gain=0.303958
tree= 0, node= 63, feature= 5, thr= 15.69, gain=0.320035
tree= 0, node= 64, feature= 7, thr=  1.02, gain=0.012970
tree= 0, node= 65, feature= 2, thr= 36.20, gain=0.032351
tree= 0, node= 66, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 67, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 70, feature= 4, thr= 94.29, gain=0.080391
tree= 0, node= 71, feature= 0, thr= 56.86, gain=0.219798
tree= 0, node= 72, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 73, feature= 6, thr= 67.18, gain=0.213599
```

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tree= 0, node= 76, feature= 4, thr= 39.06, gain=0.200505
tree= 0, node= 77, feature= 2, thr= 23.53, gain=0.130619
tree= 0, node= 78, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 79, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 80, feature= 5, thr= 34.67, gain=0.201709
tree= 0, node= 81, feature= 2, thr= 23.39, gain=0.012275
tree= 0, node= 84, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 85, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 86, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 87, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 88, feature= 5, thr= 43.14, gain=0.068238
tree= 0, node= 89, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 90, feature= 5, thr= 44.41, gain=0.414743
tree= 0, node= 91, feature= 4, thr= 62.75, gain=0.382664
tree= 0, node= 92, feature= 0, thr= 52.24, gain=0.083243
tree= 0, node= 93, feature= 9, thr=  0.08, gain=0.026969
tree= 0, node= 94, feature= 5, thr= 44.67, gain=0.392075
tree= 0, node= 95, feature= 6, thr= 22.51, gain=0.272301
tree= 0, node= 96, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 97, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 98, feature= 4, thr= 35.41, gain=0.317615
tree= 0, node= 99, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=100, feature= 0, thr=  6.12, gain=0.052882
tree= 0, node=101, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=106, feature= 6, thr= 50.98, gain=0.087391
tree= 0, node=107, feature= 0, thr= 96.18, gain=0.098547
tree= 0, node=108, feature= 4, thr= 21.41, gain=0.035277
tree= 0, node=109, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=110, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=111, feature= 9, thr= 89.57, gain=0.043276
tree= 0, node=114, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=115, feature= 5, thr= 30.41, gain=0.073411
tree= 0, node=116, feature= 4, thr= 92.59, gain=0.153395
tree= 0, node=117, feature= 1, thr= 82.55, gain=0.276382
tree= 0, node=118, feature= 5, thr= 91.22, gain=0.123292
tree= 0, node=119, feature= 8, thr= 80.41, gain=0.068406
tree= 0, node=122, feature= 7, thr= 93.41, gain=0.227294
tree= 0, node=123, feature= 5, thr= 89.86, gain=0.084931
tree= 0, node=124, feature= 9, thr= 61.02, gain=0.040907
tree= 0, node=125, feature= 0, thr= 61.61, gain=0.151646
tree= 0, node=126, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=127, feature= 8, thr= 54.90, gain=0.118231
tree= 0, node=128, feature= 8, thr= 11.47, gain=0.027087
tree= 0, node=129, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=130, feature= 2, thr=  0.71, gain=0.032814
tree= 0, node=131, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=140, feature= 9, thr=  0.57, gain=0.093998
tree= 0, node=141, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=142, feature= 2, thr= 38.67, gain=0.025041
tree= 0, node=143, feature= 6, thr= 29.41, gain=0.499652
tree= 0, node=146, feature= 3, thr= 78.67, gain=0.362044
tree= 0, node=147, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=152, feature= 9, thr=  9.06, gain=0.056465
tree= 0, node=153, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=154, feature=-1, thr= -1.00, gain=-1.000000
```

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tree= 0, node=155, feature= 6, thr= 29.41, gain=0.396800
tree= 0, node=160, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=161, feature= 1, thr= 78.29, gain=0.124968
tree= 0, node=162, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=163, feature= 1, thr= 77.08, gain=0.047464
tree= 0, node=176, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=177, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=180, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=181, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=182, feature= 7, thr= 24.59, gain=0.423930
tree= 0, node=183, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=184, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=185, feature= 7, thr= 13.25, gain=0.064221
tree= 0, node=186, feature= 2, thr= 19.61, gain=0.282488
tree= 0, node=187, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=188, feature= 6, thr=  1.04, gain=0.040013
tree= 0, node=189, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=190, feature= 8, thr= 70.35, gain=0.102458
tree= 0, node=191, feature= 2, thr= 33.33, gain=0.211688
tree= 0, node=196, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=197, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=200, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=201, feature= 8, thr=  9.80, gain=0.363287
tree= 0, node=212, feature= 4, thr= 12.65, gain=0.128025
tree= 0, node=213, feature= 7, thr=  9.71, gain=0.443792
tree= 0, node=214, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=215, feature= 6, thr= 68.24, gain=0.317943
tree= 0, node=216, feature= 2, thr= 25.82, gain=0.068356
tree= 0, node=217, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=222, feature= 9, thr= 66.24, gain=0.030161
tree= 0, node=223, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=230, feature= 4, thr= 65.96, gain=0.336258
tree= 0, node=231, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=232, feature= 5, thr= 84.14, gain=0.143081
tree= 0, node=233, feature= 6, thr= 51.57, gain=0.221095
tree= 0, node=234, feature= 3, thr= 82.49, gain=0.504684
tree= 0, node=235, feature= 7, thr= 68.24, gain=0.278378
tree= 0, node=236, feature= 4, thr= 59.37, gain=0.148279
tree= 0, node=237, feature= 8, thr= 71.71, gain=0.070141
tree= 0, node=238, feature= 1, thr= 74.29, gain=0.310353
tree= 0, node=239, feature= 3, thr= 97.65, gain=0.088588
tree= 0, node=244, feature= 7, thr= 87.24, gain=0.084750
tree= 0, node=245, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=246, feature= 9, thr= 68.63, gain=0.013872
tree= 0, node=247, feature= 3, thr= 86.59, gain=0.523060
tree= 0, node=248, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=249, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=250, feature= 5, thr= 99.12, gain=0.260103
tree= 0, node=251, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=254, feature= 8, thr=  4.24, gain=0.074302
tree= 0, node=255, feature= 3, thr= 84.96, gain=0.217724
tree= 0, node=256, feature= 1, thr= 79.45, gain=0.020912
tree= 0, node=257, feature= 1, thr= 88.33, gain=0.027698
tree= 0, node=260, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=261, feature= 9, thr=  9.10, gain=0.030945
```

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tree= 0, node=280, feature= 8, thr=  2.06, gain=0.228433
tree= 0, node=281, feature= 2, thr= 56.71, gain=0.131375
tree= 0, node=284, feature= 2, thr= 18.59, gain=0.061049
tree= 0, node=285, feature= 6, thr= 62.12, gain=0.127487
tree= 0, node=286, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=287, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=292, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=293, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=304, feature= 6, thr= 25.49, gain=0.136864
tree= 0, node=305, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=310, feature= 9, thr=  7.14, gain=0.076396
tree= 0, node=311, feature= 6, thr= 37.06, gain=0.252079
tree= 0, node=322, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=323, feature= 3, thr= 97.06, gain=0.075751
tree= 0, node=326, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=327, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=364, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=365, feature= 5, thr= 73.25, gain=0.017448
tree= 0, node=370, feature= 2, thr= 18.27, gain=0.079483
tree= 0, node=371, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=372, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=373, feature= 7, thr= 24.31, gain=0.150388
tree= 0, node=376, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=377, feature= 3, thr= 57.53, gain=0.083650
tree= 0, node=380, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=381, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=382, feature= 2, thr=  6.27, gain=0.111636
tree= 0, node=383, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=402, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=403, feature= 0, thr= 33.45, gain=0.033810
tree= 0, node=424, feature= 7, thr=  1.78, gain=0.093835
tree= 0, node=425, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=426, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=427, feature= 2, thr= 17.65, gain=0.055432
tree= 0, node=430, feature= 3, thr= 79.41, gain=0.214559
tree= 0, node=431, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=432, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=433, feature= 7, thr= 59.02, gain=0.031757
tree= 0, node=444, feature= 8, thr= 99.06, gain=0.011657
tree= 0, node=445, feature= 8, thr= 99.06, gain=0.009575
tree= 0, node=460, feature= 3, thr= 65.55, gain=0.188380
tree= 0, node=461, feature= 8, thr= 25.33, gain=0.044548
tree= 0, node=464, feature= 3, thr= 99.12, gain=0.406929
tree= 0, node=465, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=466, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=467, feature= 3, thr= 86.27, gain=0.437558
tree= 0, node=468, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=469, feature= 0, thr=  1.14, gain=0.097755
tree= 0, node=470, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=471, feature= 1, thr= 88.33, gain=0.135823
tree= 0, node=472, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=473, feature= 2, thr=  6.86, gain=0.053384
tree= 0, node=474, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=475, feature= 3, thr= 84.12, gain=0.213449
tree= 0, node=476, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=477, feature= 7, thr= 79.14, gain=0.198271
tree= 0, node=478, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=479, feature= 8, thr= 88.08, gain=0.019500
tree= 0, node=488, feature= 4, thr= 91.16, gain=0.214950
tree= 0, node=489, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=492, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=493, feature= 7, thr= 97.12, gain=0.005867
tree= 0, node=494, feature= 7, thr= 91.06, gain=0.008423
tree= 0, node=495, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=500, feature= 4, thr= 83.53, gain=0.234998
tree= 0, node=501, feature= 6, thr= 60.78, gain=0.692659
tree= 0, node=508, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=509, feature= 6, thr=  1.96, gain=0.135046
tree= 0, node=510, feature= 5, thr= 73.00, gain=0.107916
tree= 0, node=511, feature= 1, thr= 95.41, gain=0.079921
tree= 0, node=512, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=513, feature= 0, thr= 38.24, gain=0.023586
tree= 0, node=514, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=515, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=522, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=523, feature= 4, thr= 76.47, gain=0.074338
tree= 0, node=560, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=561, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=562, feature= 4, thr= 27.47, gain=0.035740
tree= 0, node=563, feature= 2, thr= 86.51, gain=0.187414
tree= 0, node=568, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=569, feature= 0, thr=  1.08, gain=0.121579
tree= 0, node=570, feature= 6, thr= 12.16, gain=0.138042
tree= 0, node=571, feature= 8, thr= 25.10, gain=0.022569
tree= 0, node=608, feature= 5, thr= 56.22, gain=0.002790
tree= 0, node=609, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=620, feature= 6, thr= 16.47, gain=0.019496
tree= 0, node=621, feature= 3, thr= 95.12, gain=0.035375
tree= 0, node=622, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=623, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=646, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=647, feature= 4, thr= 53.41, gain=0.056262
tree= 0, node=730, feature= 5, thr= 70.33, gain=0.043542
tree= 0, node=731, feature= 8, thr= 96.82, gain=0.037221
tree= 0, node=740, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=741, feature= 2, thr= 29.59, gain=0.033673
tree= 0, node=746, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=747, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=754, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=755, feature= 1, thr= 98.04, gain=0.002407
tree= 0, node=764, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=765, feature= 3, thr= 66.33, gain=0.026974
tree= 0, node=806, feature= 5, thr= 20.12, gain=0.126317
tree= 0, node=807, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=848, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=849, feature= 4, thr=  6.12, gain=0.013438
tree= 0, node=854, feature= 2, thr=  7.33, gain=0.036231
tree= 0, node=855, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=860, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=861, feature= 6, thr=  9.20, gain=0.022620
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tree= 0, node=866, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=867, feature= 4, thr=  0.41, gain=0.005741
tree= 0, node=888, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=889, feature= 3, thr= 87.67, gain=0.350823
tree= 0, node=890, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=891, feature= 6, thr= 83.00, gain=0.060052
tree= 0, node=920, feature= 1, thr= 46.08, gain=0.042633
tree= 0, node=921, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=922, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=923, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=928, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=929, feature= 9, thr= 36.12, gain=0.613112
tree= 0, node=934, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=935, feature= 8, thr= 49.84, gain=0.183714
tree= 0, node=938, feature= 2, thr= 27.61, gain=0.211508
tree= 0, node=939, feature= 0, thr=  3.10, gain=0.061375
tree= 0, node=942, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=943, feature= 0, thr=  3.02, gain=0.222341
tree= 0, node=946, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=947, feature= 5, thr= 77.22, gain=0.077428
tree= 0, node=950, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=951, feature= 4, thr= 82.49, gain=0.040787
tree= 0, node=954, feature= 9, thr= 44.25, gain=0.054617
tree= 0, node=955, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=958, feature= 2, thr= 84.63, gain=0.096705
tree= 0, node=959, feature= 1, thr= 82.53, gain=0.012454
tree= 0, node=976, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=977, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=987, feature= 1, thr= 67.00, gain=0.097811
tree= 0, node=988, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=989, feature= 9, thr= 76.37, gain=0.058583
tree= 0, node=1000, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=1002, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1003, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1018, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1019, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1020, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=1022, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1023, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1026, feature= 2, thr= 43.92, gain=0.062368
tree= 0, node=1027, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1046, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1047, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1124, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1125, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1126, feature= 8, thr=  3.24, gain=0.053299
tree= 0, node=1127, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1138, feature= 5, thr= 74.12, gain=0.235238
tree= 0, node=1139, feature= 0, thr= 19.67, gain=0.135226
tree= 0, node=1140, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1141, feature= 7, thr= 40.04, gain=0.099966
tree= 0, node=1142, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=1143, feature= 0, thr= 17.57, gain=0.400033
tree= 0, node=1216, feature= 4, thr= 14.53, gain=0.009590
tree= 0, node=1217, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1240, feature= 8, thr= 30.88, gain=0.014591
tree= 0, node=1241, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1242, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1243, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1294, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1295, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1460, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1461, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1462, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1463, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1482, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1483, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1510, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1511, feature= 3, thr= 69.29, gain=0.043287
tree= 0, node=1530, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1531, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1612, feature= 6, thr= 79.25, gain=0.092216
tree= 0, node=1613, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1698, feature= 1, thr= 86.20, gain=0.018289
tree= 0, node=1699, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1708, feature= 0, thr= 42.55, gain=0.244990
tree= 0, node=1709, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1722, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1723, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1734, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1735, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1778, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1779, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1782, feature= 5, thr= 64.49, gain=0.440825
tree= 0, node=1783, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1840, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1841, feature= 2, thr= 58.82, gain=0.047277
tree= 0, node=1858, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1859, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1870, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1871, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1876, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1877, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1878, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1879, feature= 7, thr= 76.67, gain=0.310152
tree= 0, node=1886, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1887, feature= 2, thr= 76.47, gain=0.532451
tree= 0, node=1894, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1895, feature= 0, thr= 27.57, gain=0.053944
tree= 0, node=1902, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1903, feature= 9, thr= 32.12, gain=0.319601
tree= 0, node=1908, feature= 6, thr= 60.08, gain=0.039966
tree= 0, node=1909, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1916, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1917, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1918, feature= 3, thr=100.00, gain=0.000000
tree= 0, node=1919, feature= 1, thr= 88.33, gain=0.015339
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tree= 0, node=1974, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1975, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=1978, feature= 1, thr= 72.06, gain=0.056761
tree= 0, node=1979, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2042, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2043, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2052, feature= 8, thr=  5.18, gain=0.026879
tree= 0, node=2053, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2252, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2253, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2276, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2277, feature= 0, thr=  0.00, gain=0.000000
tree= 0, node=2278, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2279, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2282, feature= 1, thr= 78.63, gain=0.348064
tree= 0, node=2283, feature= 4, thr= 71.14, gain=0.381834
tree= 0, node=2286, feature= 3, thr=100.00, gain=0.000000
tree= 0, node=2287, feature= 8, thr= 29.33, gain=0.026638
tree= 0, node=2432, feature= 1, thr=100.00, gain=0.000000
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tree= 0, node=2480, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2481, feature= 4, thr=  0.75, gain=0.021920
tree= 0, node=3022, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3023, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=3225, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3396, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3397, feature= 4, thr=  0.12, gain=0.003076
tree= 0, node=3416, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3417, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3564, feature= 1, thr= 90.08, gain=0.092841
tree= 0, node=3565, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3682, feature= 0, thr=  3.24, gain=0.044108
tree= 0, node=3683, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3758, feature= 6, thr= 57.94, gain=0.060275
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tree= 0, node=3774, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3775, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3790, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3791, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3806, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3807, feature= 2, thr= 31.47, gain=0.043972
tree= 0, node=3816, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3817, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3836, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3837, feature= 7, thr= 68.57, gain=0.249207
tree= 0, node=3838, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3839, feature= 5, thr= 63.67, gain=0.102462
tree= 0, node=3956, feature= 1, thr= 58.35, gain=0.008813
tree= 0, node=3957, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4104, feature= 7, thr=  0.02, gain=0.029804
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tree= 0, node=4554, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4555, feature= 4, thr= 81.65, gain=0.134556
tree= 0, node=4564, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=4565, feature= 0, thr= 22.86, gain=0.140899
tree= 0, node=4566, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4567, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4572, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4573, feature= 0, thr=  6.33, gain=0.043947
tree= 0, node=4574, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4575, feature= 7, thr= 44.47, gain=0.061937
tree= 0, node=4864, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4865, feature= 5, thr= 55.14, gain=0.023162
tree= 0, node=4962, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=4963, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=6794, feature= 7, thr= 54.82, gain=0.025816
tree= 0, node=6795, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=7128, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=7129, feature= 5, thr= 13.04, gain=0.137406
tree= 0, node=7364, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=7365, feature= 8, thr= 19.61, gain=0.226968
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tree= 0, node=7912, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=7913, feature= 8, thr= 32.53, gain=0.125575
tree= 0, node=8208, feature= 0, thr=  3.73, gain=0.039525
tree= 0, node=8209, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=9110, feature= 8, thr= 34.12, gain=0.065818
tree= 0, node=9111, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=9130, feature= 7, thr= 32.33, gain=0.012791
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tree= 0, node=9147, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=9151, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=9730, feature= 9, thr=  0.06, gain=0.000649
tree= 0, node=9731, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=13588, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=13589, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=14258, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=14259, feature= 7, thr= 60.27, gain=0.065088
tree= 0, node=14730, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=14731, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=15358, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=15359, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=15827, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=16416, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=16417, feature= 9, thr=  6.10, gain=0.011968
tree= 0, node=18220, feature= 8, thr= 23.06, gain=0.031564
tree= 0, node=18221, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=18260, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=18261, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=19460, feature= 3, thr= 79.12, gain=0.009281
tree= 0, node=19461, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=28518, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=28519, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=32834, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=32835, feature= 8, thr=  4.02, gain=0.040096
tree= 0, node=36440, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=36441, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=38920, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=38921, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=65670, feature= 6, thr= 71.24, gain=0.145543
tree= 0, node=65671, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=131340, feature= 8, thr=  0.08, gain=0.008284
tree= 0, node=131341, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=262680, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=262681, feature=-1, thr= -1.00, gain=-1.000000
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ID=    1, predicted=  6, true=  8, accuracy=0.00
ID=    2, predicted=  0, true=  8, accuracy=0.00
ID=    3, predicted=  4, true=  9, accuracy=0.00
ID=    4, predicted=  3, true=  9, accuracy=0.00
ID=    5, predicted=  2, true=  1, accuracy=0.00
ID=    6, predicted=  9, true=  4, accuracy=0.00
ID=    7, predicted=  9, true=  7, accuracy=0.00
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ID=    9, predicted=  9, true=  9, accuracy=1.00
ID=   10, predicted=  9, true=  9, accuracy=1.00
ID=   11, predicted=  0, true=  0, accuracy=1.00
ID=   12, predicted=  5, true=  2, accuracy=0.00
ID=   13, predicted=  0, true=  0, accuracy=1.00
ID=   42, predicted=  5, true=  5, accuracy=1.00
ID=   43, predicted=  6, true=  6, accuracy=1.00
ID=   44, predicted=  0, true=  0, accuracy=1.00
ID=   45, predicted=  5, true=  8, accuracy=0.00
ID=   46, predicted=  2, true=  2, accuracy=1.00
ID=   47, predicted=  8, true=  8, accuracy=1.00
ID=   48, predicted=  7, true=  7, accuracy=1.00
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ID=   50, predicted=  1, true=  1, accuracy=1.00
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ID=   52, predicted=  9, true=  5, accuracy=0.00
ID=   53, predicted=  4, true=  4, accuracy=1.00
ID=   54, predicted=  1, true=  1, accuracy=1.00
ID=   55, predicted=  2, true=  2, accuracy=1.00
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ID=   57, predicted=  6, true=  6, accuracy=1.00
ID=   58, predicted=  0, true=  0, accuracy=1.00
ID=   59, predicted=  8, true=  8, accuracy=1.00
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ID=   93, predicted=  8, true=  8, accuracy=1.00
ID=   94, predicted=  2, true=  2, accuracy=1.00
ID=   95, predicted=  3, true=  9, accuracy=0.00
ID=   96, predicted=  0, true=  0, accuracy=1.00
ID=   97, predicted=  8, true=  8, accuracy=1.00
```

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ID=   98, predicted=  4, true=  4, accuracy=1.00
ID=   99, predicted=  7, true=  7, accuracy=1.00
ID=  100, predicted=  6, true=  6, accuracy=1.00
ID=  101, predicted=  7, true=  7, accuracy=1.00
ID=  102, predicted=  9, true=  4, accuracy=0.00
ID=  103, predicted=  1, true=  1, accuracy=1.00
ID=  104, predicted=  7, true=  7, accuracy=1.00
ID=  105, predicted=  3, true=  9, accuracy=0.00
ID=  106, predicted=  5, true=  5, accuracy=1.00
ID=  107, predicted=  2, true=  1, accuracy=0.00
ID=  108, predicted=  3, true=  3, accuracy=1.00
ID=  109, predicted=  2, true=  1, accuracy=0.00
ID=  110, predicted=  2, true=  1, accuracy=0.00
ID=  111, predicted=  3, true=  3, accuracy=1.00
ID=  112, predicted=  7, true=  7, accuracy=1.00
ID=  113, predicted=  7, true=  7, accuracy=1.00
ID=  114, predicted=  7, true=  7, accuracy=1.00
ID=  115, predicted=  7, true=  7, accuracy=1.00
ID=  116, predicted=  8, true=  5, accuracy=0.00
ID=  117, predicted=  3, true=  3, accuracy=1.00
ID=  118, predicted=  8, true=  8, accuracy=1.00
ID=  119, predicted=  2, true=  1, accuracy=0.00
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ID=  858, predicted=  2, true=  2, accuracy=1.00
ID=  859, predicted=  3, true=  3, accuracy=1.00
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ID=  866, predicted=  7, true=  7, accuracy=1.00
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ID=  869, predicted=  4, true=  4, accuracy=1.00
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ID=  876, predicted=  8, true=  8, accuracy=1.00
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ID=  879, predicted=  2, true=  2, accuracy=1.00
ID=  880, predicted=  1, true=  9, accuracy=0.00
ID=  881, predicted=  5, true=  5, accuracy=1.00
ID=  882, predicted=  4, true=  7, accuracy=0.00
ID=  883, predicted=  5, true=  5, accuracy=1.00
ID=  884, predicted=  4, true=  5, accuracy=0.00
ID=  885, predicted=  9, true=  0, accuracy=0.00
ID=  886, predicted=  2, true=  2, accuracy=1.00
ID=  887, predicted=  3, true=  9, accuracy=0.00
ID=  888, predicted=  4, true=  4, accuracy=1.00
ID=  889, predicted=  2, true=  2, accuracy=1.00
```

```
ID=  890, predicted=  8, true=  8, accuracy=1.00
ID=  891, predicted=  8, true=  8, accuracy=1.00
ID=  892, predicted=  4, true=  7, accuracy=0.00
ID=  893, predicted=  2, true=  0, accuracy=0.00
ID=  894, predicted=  8, true=  8, accuracy=1.00
ID=  895, predicted=  2, true=  1, accuracy=0.00
ID=  896, predicted=  2, true=  1, accuracy=0.00
ID=  897, predicted=  3, true=  3, accuracy=1.00
ID=  898, predicted=  3, true=  9, accuracy=0.00
ID=  976, predicted=  5, true=  5, accuracy=1.00
ID=  977, predicted=  8, true=  8, accuracy=1.00
ID=  978, predicted=  1, true=  1, accuracy=1.00
ID=  979, predicted=  4, true=  8, accuracy=0.00
ID=  980, predicted=  8, true=  8, accuracy=1.00
ID=  981, predicted=  3, true=  3, accuracy=1.00
ID=  982, predicted=  0, true=  0, accuracy=1.00
ID=  983, predicted=  6, true=  6, accuracy=1.00
ID=  984, predicted=  6, true=  6, accuracy=1.00
ID=  985, predicted=  5, true=  5, accuracy=1.00
ID=  986, predicted=  6, true=  0, accuracy=0.00
ID=  987, predicted=  2, true=  2, accuracy=1.00
ID=  988, predicted=  3, true=  3, accuracy=1.00
ID=  989, predicted=  6, true=  6, accuracy=1.00
ID= 1078, predicted=  7, true=  7, accuracy=1.00
ID= 1079, predicted=  3, true=  3, accuracy=1.00
ID= 1080, predicted=  5, true=  5, accuracy=1.00
ID= 1081, predicted=  1, true=  1, accuracy=1.00
ID= 1082, predicted=  6, true=  6, accuracy=1.00
ID= 1083, predicted=  8, true=  0, accuracy=0.00
ID= 1084, predicted=  5, true=  5, accuracy=1.00
ID= 1085, predicted=  5, true=  5, accuracy=1.00
ID= 1086, predicted=  8, true=  8, accuracy=1.00
ID= 1087, predicted=  7, true=  7, accuracy=1.00
ID= 1088, predicted=  9, true=  9, accuracy=1.00
ID= 1089, predicted=  3, true=  5, accuracy=0.00
ID= 1090, predicted=  7, true=  7, accuracy=1.00
ID= 1091, predicted=  2, true=  2, accuracy=1.00
ID= 1092, predicted=  6, true=  8, accuracy=0.00
ID= 1093, predicted=  9, true=  9, accuracy=1.00
ID= 1094, predicted=  6, true=  6, accuracy=1.00
ID= 1095, predicted=  4, true=  4, accuracy=1.00
ID= 1096, predicted=  7, true=  7, accuracy=1.00
ID= 1097, predicted=  1, true=  1, accuracy=1.00
ID= 1098, predicted=  2, true=  2, accuracy=1.00
ID= 1099, predicted=  7, true=  7, accuracy=1.00
ID= 1100, predicted=  2, true=  2, accuracy=1.00
ID= 1101, predicted=  5, true=  7, accuracy=0.00
ID= 1102, predicted=  6, true=  6, accuracy=1.00
ID= 1103, predicted=  2, true=  2, accuracy=1.00
ID= 1104, predicted=  8, true=  8, accuracy=1.00
ID= 1105, predicted=  8, true=  3, accuracy=0.00
ID= 1106, predicted=  5, true=  1, accuracy=0.00
ID= 1107, predicted=  0, true=  0, accuracy=1.00
ID= 1108, predicted=  2, true=  2, accuracy=1.00
ID= 1109, predicted=  2, true=  1, accuracy=0.00
```

```
ID= 1110, predicted=  9, true=  9, accuracy=1.00
ID= 1111, predicted=  5, true=  5, accuracy=1.00
ID= 1112, predicted=  0, true=  0, accuracy=1.00
ID= 1113, predicted=  9, true=  9, accuracy=1.00
ID= 1114, predicted=  1, true=  1, accuracy=1.00
ID= 1115, predicted=  6, true=  6, accuracy=1.00
ID= 1116, predicted=  8, true=  8, accuracy=1.00
ID= 1117, predicted=  7, true=  1, accuracy=0.00
ID= 1118, predicted=  2, true=  2, accuracy=1.00
ID= 1119, predicted=  4, true=  4, accuracy=1.00
ID= 1120, predicted=  1, true=  1, accuracy=1.00
ID= 1121, predicted=  4, true=  4, accuracy=1.00
ID= 1122, predicted=  6, true=  6, accuracy=1.00
ID= 1123, predicted=  4, true=  1, accuracy=0.00
ID= 1124, predicted=  8, true=  8, accuracy=1.00
ID= 1125, predicted=  7, true=  7, accuracy=1.00
ID= 1126, predicted=  9, true=  9, accuracy=1.00
ID= 1127, predicted=  2, true=  2, accuracy=1.00
ID= 1128, predicted=  1, true=  7, accuracy=0.00
ID= 1129, predicted=  8, true=  8, accuracy=1.00
ID= 1130, predicted=  3, true=  9, accuracy=0.00
ID= 1131, predicted=  3, true=  3, accuracy=1.00
ID= 1132, predicted=  3, true=  3, accuracy=1.00
ID= 1133, predicted=  2, true=  2, accuracy=1.00
ID= 1134, predicted=  8, true=  8, accuracy=1.00
ID= 1135, predicted=  4, true=  9, accuracy=0.00
ID= 1136, predicted=  3, true=  3, accuracy=1.00
ID= 1137, predicted=  4, true=  9, accuracy=0.00
ID= 1138, predicted=  5, true=  5, accuracy=1.00
ID= 1139, predicted=  8, true=  8, accuracy=1.00
ID= 1140, predicted=  4, true=  4, accuracy=1.00
ID= 1141, predicted=  9, true=  4, accuracy=0.00
ID= 1142, predicted=  5, true=  7, accuracy=0.00
ID= 1143, predicted=  3, true=  3, accuracy=1.00
ID= 1144, predicted=  6, true=  6, accuracy=1.00
ID= 1145, predicted=  5, true=  5, accuracy=1.00
ID= 1146, predicted=  7, true=  7, accuracy=1.00
ID= 1147, predicted=  2, true=  2, accuracy=1.00
ID= 1148, predicted=  7, true=  7, accuracy=1.00
ID= 1149, predicted=  6, true=  8, accuracy=0.00
ID= 1150, predicted=  9, true=  9, accuracy=1.00
ID= 1151, predicted=  7, true=  7, accuracy=1.00
ID= 1152, predicted=  8, true=  8, accuracy=1.00
ID= 1153, predicted=  0, true=  0, accuracy=1.00
ID= 1154, predicted=  8, true=  8, accuracy=1.00
ID= 1155, predicted=  6, true=  6, accuracy=1.00
ID= 1156, predicted=  4, true=  4, accuracy=1.00
ID= 1157, predicted=  1, true=  1, accuracy=1.00
ID= 1158, predicted=  2, true=  6, accuracy=0.00
ID= 1159, predicted=  0, true=  0, accuracy=1.00
ID= 1160, predicted=  4, true=  4, accuracy=1.00
ID= 1161, predicted=  9, true=  4, accuracy=0.00
ID= 1162, predicted=  3, true=  3, accuracy=1.00
ID= 1163, predicted=  3, true=  3, accuracy=1.00
ID= 1164, predicted=  1, true=  1, accuracy=1.00
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```
ID= 1165, predicted=  3, true=  3, accuracy=1.00
ID= 1166, predicted=  2, true=  2, accuracy=1.00
ID= 1167, predicted=  7, true=  8, accuracy=0.00
ID= 1168, predicted=  8, true=  8, accuracy=1.00
ID= 1169, predicted=  6, true=  6, accuracy=1.00
ID= 1170, predicted=  5, true=  5, accuracy=1.00
ID= 1171, predicted=  8, true=  5, accuracy=0.00
ID= 1172, predicted=  2, true=  2, accuracy=1.00
ID= 1173, predicted=  5, true=  4, accuracy=0.00
ID= 1174, predicted=  1, true=  1, accuracy=1.00
ID= 1175, predicted=  0, true=  0, accuracy=1.00
ID= 1176, predicted=  9, true=  9, accuracy=1.00
ID= 1177, predicted=  6, true=  6, accuracy=1.00
ID= 1178, predicted=  2, true=  2, accuracy=1.00
ID= 1179, predicted=  7, true=  7, accuracy=1.00
ID= 1180, predicted=  5, true=  2, accuracy=0.00
ID= 1181, predicted=  2, true=  2, accuracy=1.00
ID= 1182, predicted=  2, true=  2, accuracy=1.00
ID= 1183, predicted=  2, true=  2, accuracy=1.00
ID= 1184, predicted=  7, true=  7, accuracy=1.00
ID= 1185, predicted=  8, true=  6, accuracy=0.00
ID= 1186, predicted=  9, true=  9, accuracy=1.00
ID= 1187, predicted=  6, true=  0, accuracy=0.00
ID= 1188, predicted=  2, true=  2, accuracy=1.00
ID= 1189, predicted=  3, true=  3, accuracy=1.00
ID= 1190, predicted=  2, true=  2, accuracy=1.00
ID= 1191, predicted=  6, true=  6, accuracy=1.00
ID= 1192, predicted=  3, true=  7, accuracy=0.00
ID= 1193, predicted=  3, true=  3, accuracy=1.00
ID= 1194, predicted=  7, true=  7, accuracy=1.00
ID= 1195, predicted=  2, true=  2, accuracy=1.00
ID= 1196, predicted=  8, true=  8, accuracy=1.00
ID= 1197, predicted=  3, true=  3, accuracy=1.00
ID= 1198, predicted=  4, true=  4, accuracy=1.00
ID= 1199, predicted=  8, true=  8, accuracy=1.00
ID= 1200, predicted=  6, true=  6, accuracy=1.00
ID= 1201, predicted=  5, true=  5, accuracy=1.00
ID= 1202, predicted=  7, true=  7, accuracy=1.00
ID= 1203, predicted=  2, true=  1, accuracy=0.00
ID= 1204, predicted=  1, true=  1, accuracy=1.00
ID= 1205, predicted=  4, true=  4, accuracy=1.00
ID= 1206, predicted=  8, true=  8, accuracy=1.00
ID= 1207, predicted=  3, true=  9, accuracy=0.00
ID= 1208, predicted=  7, true=  7, accuracy=1.00
ID= 1209, predicted=  2, true=  2, accuracy=1.00
ID= 1210, predicted=  2, true=  0, accuracy=0.00
ID= 1211, predicted=  5, true=  5, accuracy=1.00
ID= 1212, predicted=  4, true=  4, accuracy=1.00
ID= 1213, predicted=  6, true=  6, accuracy=1.00
ID= 1214, predicted=  2, true=  2, accuracy=1.00
ID= 1215, predicted=  4, true=  4, accuracy=1.00
ID= 1216, predicted=  4, true=  9, accuracy=0.00
ID= 1217, predicted=  2, true=  1, accuracy=0.00
ID= 1218, predicted=  4, true=  4, accuracy=1.00
ID= 1219, predicted=  4, true=  4, accuracy=1.00
```

```
ID= 1220, predicted=  5, true=  8, accuracy=0.00
ID= 1221, predicted=  2, true=  2, accuracy=1.00
ID= 1222, predicted=  7, true=  7, accuracy=1.00
ID= 1223, predicted=  0, true=  0, accuracy=1.00
ID= 1224, predicted=  7, true=  7, accuracy=1.00
ID= 1225, predicted=  6, true=  6, accuracy=1.00
ID= 1226, predicted=  2, true=  2, accuracy=1.00
ID= 1227, predicted=  3, true=  3, accuracy=1.00
ID= 1228, predicted=  4, true=  4, accuracy=1.00
ID= 1229, predicted=  1, true=  1, accuracy=1.00
ID= 1230, predicted=  3, true=  3, accuracy=1.00
ID= 1231, predicted=  3, true=  3, accuracy=1.00
ID= 2661, predicted=  4, true=  4, accuracy=1.00
ID= 2662, predicted=  5, true=  4, accuracy=0.00
ID= 2663, predicted=  2, true=  2, accuracy=1.00
ID= 2664, predicted=  4, true=  4, accuracy=1.00
ID= 2665, predicted=  9, true=  5, accuracy=0.00
ID= 2666, predicted=  0, true=  0, accuracy=1.00
ID= 2667, predicted=  6, true=  6, accuracy=1.00
ID= 2668, predicted=  4, true=  4, accuracy=1.00
ID= 2669, predicted=  2, true=  2, accuracy=1.00
ID= 2670, predicted=  5, true=  5, accuracy=1.00
ID= 2671, predicted=  5, true=  5, accuracy=1.00
ID= 3491, predicted=  3, true=  5, accuracy=0.00
ID= 3492, predicted=  2, true=  5, accuracy=0.00
ID= 3493, predicted=  4, true=  4, accuracy=1.00
ID= 3494, predicted=  2, true=  2, accuracy=1.00
ID= 3495, predicted=  0, true=  0, accuracy=1.00
ID= 3496, predicted=  0, true=  0, accuracy=1.00
ID= 3497, predicted=  4, true=  4, accuracy=1.00
classification accuracy=0.6764
```

forest3 Full output of Training Data

```
tree= 0, node=  1, feature= 8, thr= 58.82, gain=0.275251
tree= 0, node=  2, feature= 5, thr= 62.75, gain=0.226884
tree= 0, node=  3, feature= 8, thr= 87.14, gain=0.086199
tree= 0, node=  4, feature= 2, thr= 29.41, gain=0.154560
tree= 0, node=  5, feature= 5, thr= 87.67, gain=0.145217
tree= 0, node=  6, feature= 0, thr= 19.61, gain=0.324944
tree= 0, node=  7, feature= 5, thr= 62.75, gain=0.559816
tree= 0, node=  8, feature= 6, thr= 13.73, gain=0.247151
tree= 0, node=  9, feature= 1, thr= 97.76, gain=0.434086
tree= 0, node= 10, feature= 5, thr= 76.18, gain=0.078732
tree= 0, node= 11, feature= 3, thr= 87.76, gain=0.356982
tree= 0, node= 12, feature= 8, thr= 68.33, gain=0.064377
tree= 0, node= 13, feature= 9, thr= 29.41, gain=0.493558
tree= 0, node= 14, feature= 8, thr= 99.06, gain=0.016082
tree= 0, node= 15, feature= 9, thr= 56.86, gain=0.447150
tree= 0, node= 16, feature= 1, thr= 99.31, gain=0.484915
tree= 0, node= 17, feature= 1, thr= 97.18, gain=0.043933
tree= 0, node= 18, feature= 8, thr= 15.92, gain=0.192086
tree= 0, node= 19, feature= 0, thr= 62.75, gain=0.256939
```

```
tree= 0, node= 20, feature= 4, thr= 45.10, gain=0.363340
tree= 0, node= 21, feature= 4, thr= 49.02, gain=0.162515
tree= 0, node= 22, feature= 4, thr= 45.10, gain=0.088956
tree= 0, node= 23, feature= 7, thr= 70.69, gain=0.217262
tree= 0, node= 24, feature= 3, thr= 90.20, gain=0.436787
tree= 0, node= 25, feature= 5, thr= 68.63, gain=0.246399
tree= 0, node= 26, feature= 0, thr= 62.35, gain=0.157775
tree= 0, node= 27, feature= 8, thr= 73.27, gain=0.053486
tree= 0, node= 28, feature= 0, thr= 70.59, gain=0.149718
tree= 0, node= 29, feature= 5, thr= 25.53, gain=0.576032
tree= 0, node= 30, feature= 2, thr= 47.06, gain=0.101263
tree= 0, node= 31, feature= 7, thr= 80.24, gain=0.212035
tree= 0, node= 32, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 33, feature= 8, thr=  1.14, gain=0.194205
tree= 0, node= 34, feature= 4, thr= 39.22, gain=0.057515
tree= 0, node= 35, feature= 1, thr= 99.02, gain=0.011882
tree= 0, node= 36, feature= 6, thr= 24.98, gain=0.177502
tree= 0, node= 37, feature= 5, thr= 38.90, gain=0.339309
tree= 0, node= 38, feature= 5, thr= 45.37, gain=0.464929
tree= 0, node= 39, feature= 6, thr= 44.24, gain=0.149305
tree= 0, node= 40, feature= 4, thr= 23.82, gain=0.115592
tree= 0, node= 41, feature= 8, thr= 11.37, gain=0.229957
tree= 0, node= 42, feature= 3, thr= 98.08, gain=0.080969
tree= 0, node= 43, feature= 0, thr= 11.76, gain=0.185445
tree= 0, node= 44, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 45, feature= 4, thr= 74.59, gain=0.043947
tree= 0, node= 46, feature= 9, thr= 34.69, gain=0.339362
tree= 0, node= 47, feature= 5, thr= 99.14, gain=0.153113
tree= 0, node= 48, feature= 7, thr= 53.41, gain=0.393068
tree= 0, node= 49, feature= 5, thr= 71.43, gain=0.113864
tree= 0, node= 50, feature= 5, thr= 36.00, gain=0.469329
tree= 0, node= 51, feature= 3, thr= 89.06, gain=0.554534
tree= 0, node= 52, feature= 6, thr= 47.06, gain=0.283629
tree= 0, node= 53, feature= 6, thr= 31.37, gain=0.486541
tree= 0, node= 54, feature= 9, thr= 57.45, gain=0.312870
tree= 0, node= 55, feature= 3, thr= 96.08, gain=0.305459
tree= 0, node= 56, feature= 5, thr= 29.18, gain=0.564215
tree= 0, node= 57, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 58, feature= 1, thr= 98.10, gain=0.050459
tree= 0, node= 59, feature= 1, thr= 90.20, gain=0.150612
tree= 0, node= 60, feature= 6, thr= 61.96, gain=0.334710
tree= 0, node= 61, feature= 9, thr= 21.96, gain=0.239901
tree= 0, node= 62, feature= 4, thr= 38.04, gain=0.066191
tree= 0, node= 63, feature= 8, thr= 91.06, gain=0.005799
tree= 0, node= 66, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 67, feature= 0, thr= 19.06, gain=0.169572
tree= 0, node= 68, feature= 9, thr= 18.82, gain=0.016728
tree= 0, node= 69, feature= 2, thr=  0.57, gain=0.007051
tree= 0, node= 70, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 71, feature= 0, thr= 56.86, gain=0.299448
tree= 0, node= 72, feature= 5, thr=  2.43, gain=0.044264
tree= 0, node= 73, feature= 0, thr= 60.78, gain=0.268141
tree= 0, node= 74, feature= 5, thr=  8.20, gain=0.043310
tree= 0, node= 75, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 76, feature=-1, thr= -1.00, gain=-1.000000
```

```
tree= 0, node= 77, feature= 3, thr= 87.49, gain=0.393020
tree= 0, node= 78, feature= 9, thr=  9.65, gain=0.256195
tree= 0, node= 79, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 80, feature= 9, thr= 17.65, gain=0.518957
tree= 0, node= 81, feature= 4, thr= 40.06, gain=0.072006
tree= 0, node= 82, feature= 4, thr= 78.82, gain=0.086470
tree= 0, node= 83, feature= 4, thr= 62.94, gain=0.091301
tree= 0, node= 84, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 85, feature= 6, thr= 22.00, gain=0.573160
tree= 0, node= 86, feature= 2, thr= 35.41, gain=0.128597
tree= 0, node= 87, feature= 1, thr= 81.45, gain=0.138142
tree= 0, node= 90, feature= 6, thr= 23.24, gain=0.688746
tree= 0, node= 91, feature= 6, thr= 55.92, gain=0.396520
tree= 0, node= 92, feature= 7, thr= 60.39, gain=0.035558
tree= 0, node= 93, feature= 0, thr= 29.41, gain=0.278443
tree= 0, node= 94, feature= 8, thr= 42.08, gain=0.158430
tree= 0, node= 95, feature= 2, thr= 47.06, gain=0.617862
tree= 0, node= 96, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 97, feature= 7, thr= 77.45, gain=0.074843
tree= 0, node= 98, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node= 99, feature= 9, thr= 26.98, gain=0.382983
tree= 0, node=100, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=101, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=102, feature= 9, thr= 56.47, gain=0.056137
tree= 0, node=103, feature= 5, thr= 95.29, gain=0.065210
tree= 0, node=104, feature= 9, thr=  2.27, gain=0.149332
tree= 0, node=105, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=106, feature= 0, thr= 89.12, gain=0.086984
tree= 0, node=107, feature= 7, thr= 25.10, gain=0.174653
tree= 0, node=108, feature= 7, thr= 47.12, gain=0.487492
tree= 0, node=109, feature= 7, thr= 78.67, gain=0.287752
tree= 0, node=110, feature= 1, thr= 98.86, gain=0.362400
tree= 0, node=111, feature= 7, thr= 70.59, gain=0.186133
tree= 0, node=112, feature= 7, thr= 10.78, gain=0.029530
tree= 0, node=113, feature= 2, thr= 20.12, gain=0.114074
tree= 0, node=116, feature= 3, thr=  1.55, gain=0.016544
tree= 0, node=117, feature= 4, thr=  0.92, gain=0.150393
tree= 0, node=118, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=119, feature= 7, thr=  7.75, gain=0.083103
tree= 0, node=120, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=121, feature= 3, thr= 97.33, gain=0.208357
tree= 0, node=122, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=123, feature= 9, thr= 45.33, gain=0.117773
tree= 0, node=124, feature= 1, thr= 94.51, gain=0.206413
tree= 0, node=125, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=126, feature= 3, thr= 84.20, gain=0.220510
tree= 0, node=127, feature= 8, thr= 97.02, gain=0.016975
tree= 0, node=134, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=135, feature= 9, thr=  5.49, gain=0.325083
tree= 0, node=136, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=137, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=138, feature= 5, thr= 52.29, gain=0.087266
tree= 0, node=139, feature= 6, thr= 68.33, gain=0.063085
tree= 0, node=142, feature= 9, thr= 29.00, gain=0.160820
tree= 0, node=143, feature=-1, thr= -1.00, gain=-1.000000
```

```
tree= 0, node=144, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=145, feature= 8, thr=  9.06, gain=0.072018
tree= 0, node=146, feature= 6, thr= 51.31, gain=0.106216
tree= 0, node=147, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=148, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=220, feature= 3, thr= 75.29, gain=0.169270
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tree= 0, node=837, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=2687, feature= 0, thr= 41.67, gain=0.324200
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tree= 0, node=2761, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=2792, feature= 7, thr= 53.33, gain=0.056157
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tree= 0, node=2794, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=3300, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3301, feature= 4, thr= 80.24, gain=0.046057
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tree= 0, node=3472, feature=-1, thr= -1.00, gain=-1.000000
tree= 0, node=3473, feature= 8, thr= 61.02, gain=0.044237
tree= 0, node=3562, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=8173, feature=-1, thr= -1.00, gain=-1.000000
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tree= 0, node=42885, feature=-1, thr= -1.00, gain=-1.000000
tree= 1, node=  1, feature= 7, thr= 47.06, gain=0.328021
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tree= 1, node=  3, feature= 5, thr= 70.59, gain=0.151777
tree= 1, node=  4, feature= 2, thr= 25.49, gain=0.143862
tree= 1, node=  5, feature= 4, thr= 45.10, gain=0.476704
tree= 1, node=  6, feature= 9, thr= 50.98, gain=0.164547
tree= 1, node=  7, feature= 7, thr= 79.61, gain=0.233601
tree= 1, node=  8, feature= 4, thr= 34.59, gain=0.456978
tree= 1, node=  9, feature= 0, thr= 56.86, gain=0.230367
tree= 1, node= 10, feature= 1, thr= 98.53, gain=0.301138
tree= 1, node= 11, feature= 0, thr=  3.92, gain=0.268042
tree= 1, node= 12, feature=-1, thr= -1.00, gain=-1.000000
tree= 1, node= 13, feature= 2, thr= 15.69, gain=0.171727
tree= 1, node= 14, feature= 2, thr= 54.90, gain=0.112283
tree= 1, node= 15, feature= 4, thr= 35.29, gain=0.089516
tree= 1, node= 16, feature= 8, thr= 31.37, gain=0.161589
tree= 1, node= 17, feature= 2, thr=  0.49, gain=0.015722
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tree= 1, node= 30, feature= 2, thr= 21.16, gain=0.105001
tree= 1, node= 31, feature= 1, thr= 76.04, gain=0.348395
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tree= 1, node= 62, feature= 8, thr= 49.02, gain=0.252197
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tree= 1, node=254, feature= 3, thr= 77.65, gain=0.133606
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tree= 1, node=465, feature= 1, thr= 80.59, gain=0.561145
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tree= 1, node=466, feature=-1, thr= -1.00, gain=-1.000000
tree= 1, node=467, feature= 1, thr= 82.31, gain=0.180913
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tree= 2, node= 25, feature= 7, thr= 13.08, gain=0.156226
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tree= 2, node= 29, feature= 5, thr= 98.04, gain=0.119509
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tree= 2, node= 31, feature= 3, thr= 88.08, gain=0.284549
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tree= 2, node= 33, feature= 0, thr= 66.67, gain=0.238546
tree= 2, node= 34, feature= 8, thr= 30.75, gain=0.216000
tree= 2, node= 35, feature= 2, thr= 12.37, gain=0.023015
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tree= 2, node= 43, feature= 7, thr= 59.65, gain=0.236832
tree= 2, node= 44, feature= 5, thr= 47.06, gain=0.336235
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tree= 2, node= 52, feature= 2, thr= 54.90, gain=0.267821
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tree= 2, node= 54, feature= 4, thr= 40.47, gain=0.024479
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tree= 2, node=110, feature= 7, thr= 72.29, gain=0.041426
tree= 2, node=111, feature= 2, thr=  5.88, gain=0.146788
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tree= 2, node=1425, feature=-1, thr= -1.00, gain=-1.000000
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tree= 2, node=1430, feature= 0, thr= 68.63, gain=0.232270
tree= 2, node=1431, feature= 1, thr= 91.16, gain=0.140907
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tree= 2, node=1447, feature=-1, thr= -1.00, gain=-1.000000
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tree= 2, node=7485, feature=-1, thr= -1.00, gain=-1.000000
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tree= 2, node=7521, feature=-1, thr= -1.00, gain=-1.000000
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ID=  187, predicted=  6, true=  0, accuracy=0.00
ID=  188, predicted=  6, true=  6, accuracy=1.00
ID=  189, predicted=  4, true=  4, accuracy=1.00
ID=  190, predicted=  2, true=  2, accuracy=1.00
ID=  191, predicted=  3, true=  5, accuracy=0.00
ID=  192, predicted=  7, true=  1, accuracy=0.00
ID=  193, predicted=  4, true=  8, accuracy=0.00
ID=  194, predicted=  2, true=  2, accuracy=1.00
ID=  195, predicted=  5, true=  5, accuracy=1.00
ID= 1225, predicted=  6, true=  6, accuracy=1.00
ID= 1226, predicted=  2, true=  2, accuracy=1.00
ID= 1227, predicted=  3, true=  3, accuracy=1.00
ID= 1228, predicted=  4, true=  4, accuracy=1.00
ID= 1229, predicted=  1, true=  1, accuracy=1.00
ID= 1230, predicted=  3, true=  3, accuracy=1.00
ID= 1231, predicted=  3, true=  3, accuracy=1.00
ID= 1232, predicted=  4, true=  4, accuracy=1.00
ID= 1449, predicted=  9, true=  9, accuracy=1.00
ID= 1450, predicted=  9, true=  9, accuracy=1.00
ID= 1451, predicted=  2, true=  2, accuracy=1.00
ID= 1452, predicted=  4, true=  4, accuracy=1.00
ID= 1453, predicted=  7, true=  7, accuracy=1.00
ID= 1454, predicted=  6, true=  8, accuracy=0.00
ID= 1455, predicted=  3, true=  3, accuracy=1.00
ID= 1456, predicted=  1, true=  3, accuracy=0.00
ID= 1457, predicted=  0, true=  0, accuracy=1.00
ID= 1458, predicted=  0, true=  0, accuracy=1.00
ID= 1459, predicted=  8, true=  2, accuracy=0.00
ID= 1460, predicted=  4, true=  4, accuracy=1.00
ID= 1461, predicted=  9, true=  9, accuracy=1.00
ID= 1462, predicted=  9, true=  9, accuracy=1.00
ID= 1463, predicted=  3, true=  3, accuracy=1.00
ID= 1464, predicted=  1, true=  1, accuracy=1.00
ID= 1465, predicted=  8, true=  8, accuracy=1.00
ID= 1466, predicted=  1, true=  1, accuracy=1.00
ID= 1467, predicted=  0, true=  0, accuracy=1.00
ID= 1468, predicted=  9, true=  9, accuracy=1.00
ID= 1469, predicted=  6, true=  6, accuracy=1.00
ID= 1470, predicted=  2, true=  1, accuracy=0.00
ID= 1471, predicted=  7, true=  2, accuracy=0.00
ID= 1472, predicted=  2, true=  1, accuracy=0.00
ID= 1473, predicted=  7, true=  7, accuracy=1.00
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ID= 1474, predicted=  7, true=  1, accuracy=0.00
ID= 1475, predicted=  2, true=  2, accuracy=1.00
ID= 1476, predicted=  9, true=  9, accuracy=1.00
ID= 1477, predicted=  9, true=  9, accuracy=1.00
ID= 1478, predicted=  2, true=  8, accuracy=0.00
ID= 1479, predicted=  4, true=  4, accuracy=1.00
ID= 1480, predicted=  6, true=  6, accuracy=1.00
ID= 1481, predicted=  0, true=  0, accuracy=1.00
ID= 1482, predicted=  4, true=  4, accuracy=1.00
ID= 1483, predicted=  9, true=  9, accuracy=1.00
ID= 1484, predicted=  1, true=  1, accuracy=1.00
ID= 1485, predicted=  9, true=  4, accuracy=0.00
ID= 1486, predicted=  4, true=  4, accuracy=1.00
ID= 1487, predicted=  5, true=  5, accuracy=1.00
ID= 1488, predicted=  8, true=  8, accuracy=1.00
ID= 1489, predicted=  3, true=  2, accuracy=0.00
ID= 1490, predicted=  8, true=  2, accuracy=0.00
ID= 1491, predicted=  6, true=  6, accuracy=1.00
ID= 1492, predicted=  7, true=  7, accuracy=1.00
ID= 1493, predicted=  8, true=  8, accuracy=1.00
ID= 1838, predicted=  4, true=  4, accuracy=1.00
ID= 1839, predicted=  7, true=  3, accuracy=0.00
ID= 1840, predicted=  6, true=  6, accuracy=1.00
ID= 1841, predicted=  0, true=  0, accuracy=1.00
ID= 1842, predicted=  4, true=  4, accuracy=1.00
ID= 1843, predicted=  8, true=  8, accuracy=1.00
ID= 1844, predicted=  3, true=  9, accuracy=0.00
ID= 1845, predicted=  7, true=  7, accuracy=1.00
ID= 1846, predicted=  3, true=  3, accuracy=1.00
ID= 1847, predicted=  0, true=  0, accuracy=1.00
ID= 1848, predicted=  8, true=  8, accuracy=1.00
ID= 1849, predicted=  1, true=  1, accuracy=1.00
ID= 1850, predicted=  1, true=  1, accuracy=1.00
ID= 1851, predicted=  2, true=  8, accuracy=0.00
ID= 1852, predicted=  3, true=  3, accuracy=1.00
ID= 1853, predicted=  5, true=  5, accuracy=1.00
ID= 1854, predicted=  7, true=  1, accuracy=0.00
ID= 1855, predicted=  8, true=  8, accuracy=1.00
ID= 1856, predicted=  2, true=  2, accuracy=1.00
ID= 1857, predicted=  1, true=  7, accuracy=0.00
ID= 1858, predicted=  0, true=  0, accuracy=1.00
ID= 1859, predicted=  4, true=  4, accuracy=1.00
ID= 1860, predicted=  2, true=  1, accuracy=0.00
ID= 1861, predicted=  8, true=  3, accuracy=0.00
ID= 1862, predicted=  9, true=  9, accuracy=1.00
ID= 1863, predicted=  3, true=  3, accuracy=1.00
ID= 1864, predicted=  3, true=  3, accuracy=1.00
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ID= 1866, predicted=  7, true=  7, accuracy=1.00
ID= 1867, predicted=  6, true=  6, accuracy=1.00
ID= 1868, predicted=  6, true=  6, accuracy=1.00
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ID= 1870, predicted=  7, true=  7, accuracy=1.00
ID= 1871, predicted=  5, true=  5, accuracy=1.00
ID= 1872, predicted=  8, true=  8, accuracy=1.00
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ID= 1873, predicted=  4, true=  4, accuracy=1.00
ID= 1874, predicted=  4, true=  4, accuracy=1.00
ID= 1875, predicted=  9, true=  9, accuracy=1.00
ID= 1876, predicted=  1, true=  1, accuracy=1.00
ID= 1877, predicted=  4, true=  4, accuracy=1.00
ID= 1878, predicted=  2, true=  6, accuracy=0.00
ID= 1879, predicted=  9, true=  5, accuracy=0.00
ID= 1880, predicted=  8, true=  8, accuracy=1.00
ID= 1881, predicted=  2, true=  2, accuracy=1.00
ID= 1882, predicted=  6, true=  6, accuracy=1.00
ID= 1883, predicted=  3, true=  5, accuracy=0.00
ID= 1884, predicted=  9, true=  9, accuracy=1.00
ID= 1885, predicted=  2, true=  1, accuracy=0.00
ID= 1886, predicted=  5, true=  5, accuracy=1.00
ID= 1887, predicted=  7, true=  7, accuracy=1.00
ID= 1888, predicted=  1, true=  1, accuracy=1.00
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ID= 1891, predicted=  4, true=  4, accuracy=1.00
ID= 1892, predicted=  4, true=  4, accuracy=1.00
ID= 1893, predicted=  0, true=  0, accuracy=1.00
ID= 1894, predicted=  9, true=  9, accuracy=1.00
ID= 1895, predicted=  2, true=  2, accuracy=1.00
ID= 1896, predicted=  5, true=  5, accuracy=1.00
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ID= 1898, predicted=  7, true=  7, accuracy=1.00
ID= 1899, predicted=  0, true=  0, accuracy=1.00
ID= 1900, predicted=  5, true=  0, accuracy=0.00
ID= 1901, predicted=  3, true=  3, accuracy=1.00
ID= 1902, predicted=  4, true=  4, accuracy=1.00
ID= 1903, predicted=  5, true=  5, accuracy=1.00
ID= 1904, predicted=  9, true=  0, accuracy=0.00
ID= 1905, predicted=  1, true=  1, accuracy=1.00
ID= 1906, predicted=  6, true=  6, accuracy=1.00
ID= 1907, predicted=  3, true=  3, accuracy=1.00
ID= 1908, predicted=  2, true=  2, accuracy=1.00
ID= 1909, predicted=  3, true=  3, accuracy=1.00
ID= 1910, predicted=  8, true=  8, accuracy=1.00
ID= 1911, predicted=  5, true=  8, accuracy=0.00
ID= 1912, predicted=  6, true=  0, accuracy=0.00
ID= 1913, predicted=  5, true=  5, accuracy=1.00
ID= 1914, predicted=  3, true=  3, accuracy=1.00
ID= 1915, predicted=  9, true=  5, accuracy=0.00
ID= 3493, predicted=  4, true=  4, accuracy=1.00
ID= 3494, predicted=  2, true=  2, accuracy=1.00
ID= 3495, predicted=  0, true=  0, accuracy=1.00
ID= 3496, predicted=  0, true=  0, accuracy=1.00
ID= 3497, predicted=  4, true=  4, accuracy=1.00
classification accuracy=0.7556
```