

Output\_hinge\_train.txt

```
eta = 0.1 lambda = 1
CROSS VALIDATION 0
iteration: 0 HingeLoss: 75874.45537771474
iteration: 1 HingeLoss: 75870.74656456035
iteration: 2 HingeLoss: 75870.74653745844
Convergence reached in 2 iterations
[-0.07024047 -0.5124578 0.12728471 ... 0.19160851 -0.19982005
-0.10075717]
CROSS VALIDATION 1
iteration: 0 HingeLoss: 75874.57360147501
iteration: 1 HingeLoss: 75870.74656542423
iteration: 2 HingeLoss: 75870.74653745844
Convergence reached in 2 iterations
[-0.07024047 -0.5124578 0.12728471 ... 0.19160851 -0.19982005
-0.10075717]
CROSS VALIDATION 2
iteration: 0 HingeLoss: 75861.36783637258
iteration: 1 HingeLoss: 75870.74646892265
iteration: 2 HingeLoss: 75870.74653745774
Convergence reached in 2 iterations
[-0.07024047 -0.5124578 0.12728471 ... 0.19160851 -0.19982005
-0.10075717]
CROSS VALIDATION 3
iteration: 0 HingeLoss: 75878.8084910341
iteration: 1 HingeLoss: 75870.74659636931
iteration: 2 HingeLoss: 75870.74653745866
Convergence reached in 2 iterations
[-0.07024047 -0.5124578 0.12728471 ... 0.19160851 -0.19982005
-0.10075717]
CROSS VALIDATION 4
iteration: 0 HingeLoss: 75878.8084910341
iteration: 1 HingeLoss: 75870.74659636931
iteration: 2 HingeLoss: 75870.74653745866
Convergence reached in 2 iterations
[-0.07024047 -0.5124578 0.12728471 ... 0.19160851 -0.19982005
-0.10075717]
CROSS VALIDATION 5
iteration: 0 HingeLoss: 75878.8084910341
iteration: 1 HingeLoss: 75870.74659636931
iteration: 2 HingeLoss: 75870.74653745866
Convergence reached in 2 iterations
[-0.07024047 -0.5124578 0.12728471 ... 0.19160851 -0.19982005
-0.10075717]
CROSS VALIDATION 6
iteration: 0 HingeLoss: 72887.80002455525
iteration: 1 HingeLoss: 83286.98055934443
iteration: 2 HingeLoss: 83287.21834647714
iteration: 3 HingeLoss: 83287.2183482148
Convergence reached in 3 iterations
[-0.21508333 -0.47275413 -0.10479216 ... 0.16639643 -0.18896458
-0.10756397]
CROSS VALIDATION 7
```

Output\_hinge\_train.txt

iteration: 0 HingeLoss: 75878.8084910341  
iteration: 1 HingeLoss: 75866.97942507143  
iteration: 2 HingeLoss: 75866.97933863207  
Convergence reached in 2 iterations  
[-0.07025055 -0.51245995 0.12727476 ... 0.19160269 -0.19982083  
-0.10075299]  
CROSS VALIDATION 8  
iteration: 0 HingeLoss: 75296.98827544675  
iteration: 1 HingeLoss: 74493.5673559271  
iteration: 2 HingeLoss: 74493.56165161841  
iteration: 3 HingeLoss: 74493.56165157672  
Convergence reached in 3 iterations  
[-0.06302316 -0.51565913 0.14915953 ... 0.19294185 -0.19681464  
-0.0987696 ]  
CROSS VALIDATION 9  
iteration: 0 HingeLoss: 74676.83216390671  
iteration: 1 HingeLoss: 73975.04923657555  
iteration: 2 HingeLoss: 73975.04427498288  
iteration: 3 HingeLoss: 73975.04427494662  
Convergence reached in 3 iterations  
[-0.06302316 -0.51565913 0.14915953 ... 0.19294185 -0.19681464  
-0.0987696 ]  
CROSS VALIDATION 10  
iteration: 0 HingeLoss: 73933.64613180689  
iteration: 1 HingeLoss: 73932.45793240578  
iteration: 2 HingeLoss: 73932.45792372357  
Convergence reached in 2 iterations  
[-0.07021865 -0.51243399 0.12730971 ... 0.19160667 -0.19983086  
-0.10075054]  
CROSS VALIDATION 11  
iteration: 0 HingeLoss: 75878.06350576134  
iteration: 1 HingeLoss: 75862.06466238869  
iteration: 2 HingeLoss: 75862.06454547842  
iteration: 3 HingeLoss: 75862.06454547757  
Convergence reached in 3 iterations  
[-0.07024468 -0.5124418 0.12731737 ... 0.19161237 -0.19981566  
-0.10075904]  
CROSS VALIDATION 12  
iteration: 0 HingeLoss: 72258.82422213207  
iteration: 1 HingeLoss: 72250.57600254011  
iteration: 2 HingeLoss: 72250.57594227209  
Convergence reached in 2 iterations  
[-0.08801267 -0.51658407 0.11705607 ... 0.20797454 -0.19339498  
-0.09960365]  
CROSS VALIDATION 13  
iteration: 0 HingeLoss: 75022.44390488014  
iteration: 1 HingeLoss: 83756.84062030638  
iteration: 2 HingeLoss: 83757.06273001953  
iteration: 3 HingeLoss: 83757.06273164261  
Convergence reached in 3 iterations  
[-0.19661932 -0.44548742 -0.10690042 ... 0.18979875 -0.20011084  
-0.10064332]

Output\_hinge\_train.txt

CROSS VALIDATION 14

iteration: 0 HingeLoss: 83913.17795665168  
iteration: 1 HingeLoss: 79649.06607056709  
iteration: 2 HingeLoss: 79649.09960991223  
iteration: 3 HingeLoss: 79649.09961015731

Convergence reached in 3 iterations

[-0.09408417 -0.53872171 0.11708973 ... 0.1867485 -0.18378594  
-0.10624049]

CROSS VALIDATION 15

iteration: 0 HingeLoss: 83913.17795665168  
iteration: 1 HingeLoss: 79649.06607056709  
iteration: 2 HingeLoss: 79649.09960991223  
iteration: 3 HingeLoss: 79649.09961015731

Convergence reached in 3 iterations

[-0.09408417 -0.53872171 0.11708973 ... 0.1867485 -0.18378594  
-0.10624049]

CROSS VALIDATION 16

iteration: 0 HingeLoss: 80626.91679522188  
iteration: 1 HingeLoss: 77272.95330606717  
iteration: 2 HingeLoss: 77272.99349632917  
iteration: 3 HingeLoss: 77272.99349662286

Convergence reached in 3 iterations

[-0.09408417 -0.53872171 0.11708973 ... 0.1867485 -0.18378594  
-0.10624049]

CROSS VALIDATION 17

iteration: 0 HingeLoss: 79278.88383067606  
iteration: 1 HingeLoss: 73977.99244618524  
iteration: 2 HingeLoss: 73978.01840925569  
iteration: 3 HingeLoss: 73978.01840944542

Convergence reached in 3 iterations

[-0.09408417 -0.53872171 0.11708973 ... 0.1867485 -0.18378594  
-0.10624049]

CROSS VALIDATION 18

iteration: 0 HingeLoss: 72943.0248826675  
iteration: 1 HingeLoss: 74479.9785687402  
iteration: 2 HingeLoss: 74479.99036579426  
iteration: 3 HingeLoss: 74479.99036588045

Convergence reached in 3 iterations

[-0.21504898 -0.4726451 -0.10488968 ... 0.16627498 -0.1890239  
-0.10752102]

CROSS VALIDATION 19

iteration: 0 HingeLoss: 83913.17795665169  
iteration: 1 HingeLoss: 79628.80084687611  
iteration: 2 HingeLoss: 79628.83423816014  
iteration: 3 HingeLoss: 79628.83423840415

Convergence reached in 3 iterations

[-0.09410774 -0.5387073 0.1171062 ... 0.18672626 -0.18383132  
-0.10623035]

Accuracy (Hinge Loss): 0.6

eta = 0.1 lambda = 0.3

CROSS VALIDATION 0

iteration: 0 HingeLoss: 49484.77473710426

Output\_hinge\_train.txt

iteration: 1 HingeLoss: 46103.22589255888  
iteration: 2 HingeLoss: 29740.2074812255  
iteration: 3 HingeLoss: 62022.56126900483  
iteration: 4 HingeLoss: 11504.35374634424  
iteration: 5 HingeLoss: 72352.80419375401  
iteration: 6 HingeLoss: 9759.911193280655  
iteration: 7 HingeLoss: 51643.577276764845  
iteration: 8 HingeLoss: 20064.014200681835  
iteration: 9 HingeLoss: 41224.34078535676  
iteration: 10 HingeLoss: 30947.183986527634  
iteration: 11 HingeLoss: 27671.396250884212  
iteration: 12 HingeLoss: 49832.02672852537  
iteration: 13 HingeLoss: 16191.877996619956  
iteration: 14 HingeLoss: 45142.66130094535  
iteration: 15 HingeLoss: 92454.43274207672  
iteration: 16 HingeLoss: 43058.922686854974  
iteration: 17 HingeLoss: 33939.991199635246  
iteration: 18 HingeLoss: 50962.867103764016  
iteration: 19 HingeLoss: 17140.949538103356  
iteration: 20 HingeLoss: 48063.212513912746  
iteration: 21 HingeLoss: 54524.72416271064  
iteration: 22 HingeLoss: 43748.36753931043  
iteration: 23 HingeLoss: 26708.330063244164  
iteration: 24 HingeLoss: 62584.877259444525  
iteration: 25 HingeLoss: 32794.56852234743  
iteration: 26 HingeLoss: 46176.031546007114  
iteration: 27 HingeLoss: 40983.08577166878  
iteration: 28 HingeLoss: 31990.207689466137  
iteration: 29 HingeLoss: 45291.380224991604  
iteration: 30 HingeLoss: 28101.950378599588  
iteration: 31 HingeLoss: 33304.23709022311  
iteration: 32 HingeLoss: 62901.22428200125  
iteration: 33 HingeLoss: 30327.69805606678  
iteration: 34 HingeLoss: 58449.57220580571  
iteration: 35 HingeLoss: 43984.06867904583  
iteration: 36 HingeLoss: 61399.642379688084  
iteration: 37 HingeLoss: 58289.531675695325  
iteration: 38 HingeLoss: 64860.63809934823  
iteration: 39 HingeLoss: 40470.19034622112  
iteration: 40 HingeLoss: 65253.35280448386  
iteration: 41 HingeLoss: 59765.11185966997  
iteration: 42 HingeLoss: 31860.260773301463  
iteration: 43 HingeLoss: 28821.083359521355  
iteration: 44 HingeLoss: 35662.65523882092  
iteration: 45 HingeLoss: 52236.722771061686  
iteration: 46 HingeLoss: 51318.76490847222  
iteration: 47 HingeLoss: 34209.24262267827  
iteration: 48 HingeLoss: 78475.39860640418  
iteration: 49 HingeLoss: 43663.58758463683  
iteration: 50 HingeLoss: 31113.672818802886  
iteration: 51 HingeLoss: 59819.79187133532  
iteration: 52 HingeLoss: 32938.57480016598

# Output\_hinge\_train.txt

```

iteration: 53 HingeLoss: 55196.0354275909
iteration: 54 HingeLoss: 31838.95554365958
iteration: 55 HingeLoss: 40854.35006388542
iteration: 56 HingeLoss: 22393.938446513217
iteration: 57 HingeLoss: 71557.88126359502
iteration: 58 HingeLoss: 49020.68425310537
iteration: 59 HingeLoss: 40617.326196569644
iteration: 60 HingeLoss: 72602.13796887566
iteration: 61 HingeLoss: 47198.44703526251
iteration: 62 HingeLoss: 29841.675520349254
iteration: 63 HingeLoss: 42547.741361650325
iteration: 64 HingeLoss: 50630.77122308911
iteration: 65 HingeLoss: 23188.76951002587
iteration: 66 HingeLoss: 54078.63689527237
iteration: 67 HingeLoss: 23475.68118153853
iteration: 68 HingeLoss: 46856.63924188034
iteration: 69 HingeLoss: 28920.645816215016
iteration: 70 HingeLoss: 37840.95898275429
iteration: 71 HingeLoss: 64305.561657867795
iteration: 72 HingeLoss: 33866.98265900785
iteration: 73 HingeLoss: 35347.060615723574
iteration: 74 HingeLoss: 29126.900247293757
iteration: 75 HingeLoss: 57351.813651659075
iteration: 76 HingeLoss: 48834.306297728814
iteration: 77 HingeLoss: 71666.50431234039
iteration: 78 HingeLoss: 55042.01859392119
iteration: 79 HingeLoss: 34412.797841140775
iteration: 80 HingeLoss: 50044.00010884779
iteration: 81 HingeLoss: 62786.42617370997
iteration: 82 HingeLoss: 61487.52411423916
iteration: 83 HingeLoss: 20535.434599024884
iteration: 84 HingeLoss: 46324.913698924436
iteration: 85 HingeLoss: 53101.33227354697
iteration: 86 HingeLoss: 35877.33294381268
iteration: 87 HingeLoss: 54622.35897702582
iteration: 88 HingeLoss: 35454.50317441423
iteration: 89 HingeLoss: 54624.974317543965
iteration: 90 HingeLoss: 35453.90442349485
iteration: 91 HingeLoss: 54624.97802596291
iteration: 92 HingeLoss: 35453.90357470926
iteration: 93 HingeLoss: 54624.978031219965
iteration: 94 HingeLoss: 35453.90357350602
iteration: 95 HingeLoss: 54624.97803122741
iteration: 96 HingeLoss: 35453.903573504314
iteration: 97 HingeLoss: 54624.978031227416
iteration: 98 HingeLoss: 35453.90357350431
iteration: 99 HingeLoss: 54624.97803122741
[-0.30502843 -0.77501482 -0.25613441 ... 0.43836455 -0.46571712
-0.04239405]
CROSS VALIDATION 1
iteration: 0 HingeLoss: 42318.60624825817
iteration: 1 HingeLoss: 115711.39377769097

```

Output\_hinge\_train.txt

iteration: 2 HingeLoss: 33334.729436015936  
iteration: 3 HingeLoss: 49766.042459139266  
iteration: 4 HingeLoss: 39666.218146010746  
iteration: 5 HingeLoss: 38747.29575017627  
iteration: 6 HingeLoss: 73418.04179815295  
iteration: 7 HingeLoss: 30683.930845938416  
iteration: 8 HingeLoss: 73969.65515301964  
iteration: 9 HingeLoss: 27010.806838838438  
iteration: 10 HingeLoss: 55023.95834209725  
iteration: 11 HingeLoss: 54498.151920647375  
iteration: 12 HingeLoss: 45473.71709994114  
iteration: 13 HingeLoss: 15808.137780261099  
iteration: 14 HingeLoss: 28354.394059495993  
iteration: 15 HingeLoss: 41778.264759507874  
iteration: 16 HingeLoss: 59000.763908833535  
iteration: 17 HingeLoss: 36817.44203760796  
iteration: 18 HingeLoss: 55476.48924925742  
iteration: 19 HingeLoss: 53314.24979147372  
iteration: 20 HingeLoss: 29320.55112880409  
iteration: 21 HingeLoss: 53766.294908916665  
iteration: 22 HingeLoss: 43868.837339727404  
iteration: 23 HingeLoss: 46428.90425577259  
iteration: 24 HingeLoss: 35281.20130873304  
iteration: 25 HingeLoss: 23702.266633066025  
iteration: 26 HingeLoss: 55784.54059793869  
iteration: 27 HingeLoss: 35157.49465572433  
iteration: 28 HingeLoss: 51601.29327073629  
iteration: 29 HingeLoss: 30963.517507150267  
iteration: 30 HingeLoss: 43140.64970736444  
iteration: 31 HingeLoss: 52290.26444186846  
iteration: 32 HingeLoss: 72731.93672883019  
iteration: 33 HingeLoss: 46935.989494304566  
iteration: 34 HingeLoss: 31011.298894059495  
iteration: 35 HingeLoss: 49572.44924901436  
iteration: 36 HingeLoss: 88609.93067768264  
iteration: 37 HingeLoss: 43689.257820723215  
iteration: 38 HingeLoss: 40268.18366481551  
iteration: 39 HingeLoss: 54149.819160901  
iteration: 40 HingeLoss: 37702.42710662288  
iteration: 41 HingeLoss: 73482.16662679057  
iteration: 42 HingeLoss: 30684.830030775494  
iteration: 43 HingeLoss: 73969.74466052343  
iteration: 44 HingeLoss: 27010.80705798146  
iteration: 45 HingeLoss: 55023.95844844981  
iteration: 46 HingeLoss: 54498.15192246043  
iteration: 47 HingeLoss: 45473.71710010957  
iteration: 48 HingeLoss: 15808.13778025961  
iteration: 49 HingeLoss: 28354.394059496037  
iteration: 50 HingeLoss: 41778.26475950788  
iteration: 51 HingeLoss: 59000.76390883353  
iteration: 52 HingeLoss: 36817.44203760796  
iteration: 53 HingeLoss: 55476.48924925742

# Output\_hinge\_train.txt

```

iteration: 54 HingeLoss: 53314.24979147372
iteration: 55 HingeLoss: 29320.55112880409
iteration: 56 HingeLoss: 53766.294908916665
iteration: 57 HingeLoss: 43868.837339727404
iteration: 58 HingeLoss: 46428.90425577259
iteration: 59 HingeLoss: 35281.20130873304
iteration: 60 HingeLoss: 23702.266633066025
iteration: 61 HingeLoss: 55784.54059793869
iteration: 62 HingeLoss: 35157.49465572433
iteration: 63 HingeLoss: 51601.29327073629
iteration: 64 HingeLoss: 30963.517507150267
iteration: 65 HingeLoss: 43140.64970736444
iteration: 66 HingeLoss: 52290.26444186846
iteration: 67 HingeLoss: 72731.93672883019
iteration: 68 HingeLoss: 46935.989494304566
iteration: 69 HingeLoss: 31011.298894059495
iteration: 70 HingeLoss: 49572.44924901436
iteration: 71 HingeLoss: 88609.93067768264
iteration: 72 HingeLoss: 43689.257820723215
iteration: 73 HingeLoss: 40268.18366481551
iteration: 74 HingeLoss: 54149.819160901
iteration: 75 HingeLoss: 37702.42710662288
iteration: 76 HingeLoss: 73482.16662679057
iteration: 77 HingeLoss: 30684.830030775494
iteration: 78 HingeLoss: 73969.74466052343
iteration: 79 HingeLoss: 27010.80705798146
iteration: 80 HingeLoss: 55023.95844844981
iteration: 81 HingeLoss: 54498.15192246043
iteration: 82 HingeLoss: 45473.71710010957
iteration: 83 HingeLoss: 15808.13778025961
iteration: 84 HingeLoss: 28354.394059496037
iteration: 85 HingeLoss: 41778.26475950788
iteration: 86 HingeLoss: 59000.76390883353
iteration: 87 HingeLoss: 36817.44203760796
iteration: 88 HingeLoss: 55476.48924925742
iteration: 89 HingeLoss: 53314.24979147372
iteration: 90 HingeLoss: 29320.55112880409
iteration: 91 HingeLoss: 53766.294908916665
iteration: 92 HingeLoss: 43868.837339727404
iteration: 93 HingeLoss: 46428.90425577259
iteration: 94 HingeLoss: 35281.20130873304
iteration: 95 HingeLoss: 23702.266633066025
iteration: 96 HingeLoss: 55784.54059793869
iteration: 97 HingeLoss: 35157.49465572433
iteration: 98 HingeLoss: 51601.29327073629
iteration: 99 HingeLoss: 30963.517507150267
[-0.20951972 -0.60391497 0.3193692 ... 0.3276184 0.10176325
 0.15952736]
CROSS VALIDATION 2
iteration: 0 HingeLoss: 27086.007716450673
iteration: 1 HingeLoss: 44980.84711646479
iteration: 2 HingeLoss: 36809.011384634505

```

Output\_hinge\_train.txt

iteration: 3 HingeLoss: 38425.37873436002  
iteration: 4 HingeLoss: 18018.071809098572  
iteration: 5 HingeLoss: 48336.95725753335  
iteration: 6 HingeLoss: 53436.92318954643  
iteration: 7 HingeLoss: 42634.310565281776  
iteration: 8 HingeLoss: 41992.30178218894  
iteration: 9 HingeLoss: 65925.03574315902  
iteration: 10 HingeLoss: 33331.28480531492  
iteration: 11 HingeLoss: 58756.317958044296  
iteration: 12 HingeLoss: 42658.78412200136  
iteration: 13 HingeLoss: 43176.30342516327  
iteration: 14 HingeLoss: 44035.877885908354  
iteration: 15 HingeLoss: 25653.73044344972  
iteration: 16 HingeLoss: 37675.480024731274  
iteration: 17 HingeLoss: 44250.47228030623  
iteration: 18 HingeLoss: 38719.08465204845  
iteration: 19 HingeLoss: 8547.672880566146  
iteration: 20 HingeLoss: 66326.56334149832  
iteration: 21 HingeLoss: 28079.679604240482  
iteration: 22 HingeLoss: 24773.646985213185  
iteration: 23 HingeLoss: 50437.03249952097  
iteration: 24 HingeLoss: 48744.19628452623  
iteration: 25 HingeLoss: 45610.66067734695  
iteration: 26 HingeLoss: 76559.64274786232  
iteration: 27 HingeLoss: 46499.19000391996  
iteration: 28 HingeLoss: 69979.15594860952  
iteration: 29 HingeLoss: 28313.206988051243  
iteration: 30 HingeLoss: 66930.43153780935  
iteration: 31 HingeLoss: 51849.70544496567  
iteration: 32 HingeLoss: 68115.64121417707  
iteration: 33 HingeLoss: 31960.034926143315  
iteration: 34 HingeLoss: 40768.30071163644  
iteration: 35 HingeLoss: 22038.47211686895  
iteration: 36 HingeLoss: 41593.150915173464  
iteration: 37 HingeLoss: 31026.77088624997  
iteration: 38 HingeLoss: 27538.573341392166  
iteration: 39 HingeLoss: 44493.264825596794  
iteration: 40 HingeLoss: 56332.92797362403  
iteration: 41 HingeLoss: 52092.26198246612  
iteration: 42 HingeLoss: 38195.45980621985  
iteration: 43 HingeLoss: 59729.58022097407  
iteration: 44 HingeLoss: 57553.48785309133  
iteration: 45 HingeLoss: 63066.667794714114  
iteration: 46 HingeLoss: 37495.774728985605  
iteration: 47 HingeLoss: 34050.70016665975  
iteration: 48 HingeLoss: 56401.70301009946  
iteration: 49 HingeLoss: 9254.14270639938  
iteration: 50 HingeLoss: 51556.57778884794  
iteration: 51 HingeLoss: 20062.200911699307  
iteration: 52 HingeLoss: 41223.52871141935  
iteration: 53 HingeLoss: 31028.814945088343  
iteration: 54 HingeLoss: 27538.31088368099



# Output\_hinge\_train.txt

```

iteration: 55 HingeLoss: 44493.24756302313
iteration: 56 HingeLoss: 56332.92805933452
iteration: 57 HingeLoss: 52092.261955447066
iteration: 58 HingeLoss: 38195.45980677935
iteration: 59 HingeLoss: 59729.58022092872
iteration: 60 HingeLoss: 57553.48785309195
iteration: 61 HingeLoss: 63066.667794714085
iteration: 62 HingeLoss: 37495.774728985605
iteration: 63 HingeLoss: 34050.70016665975
iteration: 64 HingeLoss: 56401.70301009946
iteration: 65 HingeLoss: 9254.14270639938
iteration: 66 HingeLoss: 51556.57778884794
iteration: 67 HingeLoss: 20062.200911699307
iteration: 68 HingeLoss: 41223.52871141935
iteration: 69 HingeLoss: 31028.814945088343
iteration: 70 HingeLoss: 27538.31088368099
iteration: 71 HingeLoss: 44493.24756302313
iteration: 72 HingeLoss: 56332.92805933452
iteration: 73 HingeLoss: 52092.261955447066
iteration: 74 HingeLoss: 38195.45980677935
iteration: 75 HingeLoss: 59729.58022092872
iteration: 76 HingeLoss: 57553.48785309195
iteration: 77 HingeLoss: 63066.667794714085
iteration: 78 HingeLoss: 37495.774728985605
iteration: 79 HingeLoss: 34050.70016665975
iteration: 80 HingeLoss: 56401.70301009946
iteration: 81 HingeLoss: 9254.14270639938
iteration: 82 HingeLoss: 51556.57778884794
iteration: 83 HingeLoss: 20062.200911699307
iteration: 84 HingeLoss: 41223.52871141935
iteration: 85 HingeLoss: 31028.814945088343
iteration: 86 HingeLoss: 27538.31088368099
iteration: 87 HingeLoss: 44493.24756302313
iteration: 88 HingeLoss: 56332.92805933452
iteration: 89 HingeLoss: 52092.261955447066
iteration: 90 HingeLoss: 38195.45980677935
iteration: 91 HingeLoss: 59729.58022092872
iteration: 92 HingeLoss: 57553.48785309195
iteration: 93 HingeLoss: 63066.667794714085
iteration: 94 HingeLoss: 37495.774728985605
iteration: 95 HingeLoss: 34050.70016665975
iteration: 96 HingeLoss: 56401.70301009946
iteration: 97 HingeLoss: 9254.14270639938
iteration: 98 HingeLoss: 51556.57778884794
iteration: 99 HingeLoss: 20062.200911699307
[ 0.04211974 -0.57946292 0.17553664 ... 0.2533735 -0.31148394
 0.00386846]
CROSS VALIDATION 3
iteration: 0 HingeLoss: 42258.87194876519
iteration: 1 HingeLoss: 109326.74874129833
iteration: 2 HingeLoss: 33334.85418958737
iteration: 3 HingeLoss: 49766.04497488971

```

Output\_hinge\_train.txt

iteration: 4 HingeLoss: 39666.21828900429  
iteration: 5 HingeLoss: 44109.95478759227  
iteration: 6 HingeLoss: 60491.33671986275  
iteration: 7 HingeLoss: 22401.272362894262  
iteration: 8 HingeLoss: 46594.5256238947  
iteration: 9 HingeLoss: 45174.15906607395  
iteration: 10 HingeLoss: 47676.36032674289  
iteration: 11 HingeLoss: 62488.34390724601  
iteration: 12 HingeLoss: 36848.00602355521  
iteration: 13 HingeLoss: 38222.86659485675  
iteration: 14 HingeLoss: 34636.33709288528  
iteration: 15 HingeLoss: 53559.23211424594  
iteration: 16 HingeLoss: 50821.38562689805  
iteration: 17 HingeLoss: 36373.25940230436  
iteration: 18 HingeLoss: 28925.904241477558  
iteration: 19 HingeLoss: 48660.71335662744  
iteration: 20 HingeLoss: 45813.70021162661  
iteration: 21 HingeLoss: 29765.985273393977  
iteration: 22 HingeLoss: 62021.29054009007  
iteration: 23 HingeLoss: 11503.61655710927  
iteration: 24 HingeLoss: 51938.38854388262  
iteration: 25 HingeLoss: 36906.792240750285  
iteration: 26 HingeLoss: 39563.651033898204  
iteration: 27 HingeLoss: 41482.61181842303  
iteration: 28 HingeLoss: 36714.1534857961  
iteration: 29 HingeLoss: 60520.37132276802  
iteration: 30 HingeLoss: 40833.4288152213  
iteration: 31 HingeLoss: 40474.708018491845  
iteration: 32 HingeLoss: 45106.099850969724  
iteration: 33 HingeLoss: 35764.200858210126  
iteration: 34 HingeLoss: 54521.66430006152  
iteration: 35 HingeLoss: 35438.290798557595  
iteration: 36 HingeLoss: 54563.23751643048  
iteration: 37 HingeLoss: 35437.83058301103  
iteration: 38 HingeLoss: 54563.29645299815  
iteration: 39 HingeLoss: 35437.82993061492  
iteration: 40 HingeLoss: 54563.296536546404  
iteration: 41 HingeLoss: 35437.82992969009  
iteration: 42 HingeLoss: 54563.29653666484  
iteration: 43 HingeLoss: 35437.82992968878  
iteration: 44 HingeLoss: 54563.296536665  
iteration: 45 HingeLoss: 35437.82992968878  
iteration: 46 HingeLoss: 54563.296536665  
iteration: 47 HingeLoss: 35437.82992968878  
iteration: 48 HingeLoss: 54563.296536665  
iteration: 49 HingeLoss: 35437.82992968878  
iteration: 50 HingeLoss: 54563.296536665  
iteration: 51 HingeLoss: 35437.82992968878  
iteration: 52 HingeLoss: 54563.296536665  
iteration: 53 HingeLoss: 35437.82992968878  
iteration: 54 HingeLoss: 54563.296536665  
iteration: 55 HingeLoss: 35437.82992968878

# Output\_hinge\_train.txt

```

iteration: 56 HingeLoss: 54563.296536665
iteration: 57 HingeLoss: 35437.82992968878
iteration: 58 HingeLoss: 54563.296536665
iteration: 59 HingeLoss: 35437.82992968878
iteration: 60 HingeLoss: 54563.296536665
iteration: 61 HingeLoss: 35437.82992968878
iteration: 62 HingeLoss: 54563.296536665
iteration: 63 HingeLoss: 35437.82992968878
iteration: 64 HingeLoss: 54563.296536665
iteration: 65 HingeLoss: 35437.82992968878
iteration: 66 HingeLoss: 54563.296536665
iteration: 67 HingeLoss: 35437.82992968878
iteration: 68 HingeLoss: 54563.296536665
iteration: 69 HingeLoss: 35437.82992968878
iteration: 70 HingeLoss: 54563.296536665
iteration: 71 HingeLoss: 35437.82992968878
iteration: 72 HingeLoss: 54563.296536665
iteration: 73 HingeLoss: 35437.82992968878
iteration: 74 HingeLoss: 54563.296536665
iteration: 75 HingeLoss: 35437.82992968878
iteration: 76 HingeLoss: 54563.296536665
iteration: 77 HingeLoss: 35437.82992968878
iteration: 78 HingeLoss: 54563.296536665
iteration: 79 HingeLoss: 35437.82992968878
iteration: 80 HingeLoss: 54563.296536665
iteration: 81 HingeLoss: 35437.82992968878
iteration: 82 HingeLoss: 54563.296536665
iteration: 83 HingeLoss: 35437.82992968878
iteration: 84 HingeLoss: 54563.296536665
iteration: 85 HingeLoss: 35437.82992968878
iteration: 86 HingeLoss: 54563.296536665
iteration: 87 HingeLoss: 35437.82992968878
iteration: 88 HingeLoss: 54563.296536665
iteration: 89 HingeLoss: 35437.82992968878
iteration: 90 HingeLoss: 54563.296536665
iteration: 91 HingeLoss: 35437.82992968878
iteration: 92 HingeLoss: 54563.296536665
iteration: 93 HingeLoss: 35437.82992968878
iteration: 94 HingeLoss: 54563.296536665
iteration: 95 HingeLoss: 35437.82992968878
iteration: 96 HingeLoss: 54563.296536665
iteration: 97 HingeLoss: 35437.82992968878
iteration: 98 HingeLoss: 54563.296536665
iteration: 99 HingeLoss: 35437.82992968878
[-0.51115432 -0.00128012 -0.2163776 ... 0.29714714 -0.17351389
 0.05701843]
CROSS VALIDATION 4
iteration: 0 HingeLoss: 42258.87194876519
iteration: 1 HingeLoss: 109612.55269531444
iteration: 2 HingeLoss: 51994.17230610477
iteration: 3 HingeLoss: 24017.910665356754
iteration: 4 HingeLoss: 38363.41355191104

```

Output\_hinge\_train.txt

iteration: 5 HingeLoss: 59305.805755765294  
iteration: 6 HingeLoss: 68786.54175076546  
iteration: 7 HingeLoss: 24914.70903330473  
iteration: 8 HingeLoss: 51921.5642344204  
iteration: 9 HingeLoss: 37558.03605812001  
iteration: 10 HingeLoss: 38436.89148739149  
iteration: 11 HingeLoss: 18325.263545124057  
iteration: 12 HingeLoss: 48689.84237867985  
iteration: 13 HingeLoss: 39484.50804310656  
iteration: 14 HingeLoss: 72019.65173498285  
iteration: 15 HingeLoss: 31510.103362375943  
iteration: 16 HingeLoss: 70871.18847950813  
iteration: 17 HingeLoss: 32096.4773519943  
iteration: 18 HingeLoss: 73713.36441605871  
iteration: 19 HingeLoss: 35975.21174501609  
iteration: 20 HingeLoss: 49912.11835628075  
iteration: 21 HingeLoss: 56394.893306936545  
iteration: 22 HingeLoss: 51269.11531578221  
iteration: 23 HingeLoss: 44141.98515710619  
iteration: 24 HingeLoss: 43724.337324785694  
iteration: 25 HingeLoss: 43802.65959956107  
iteration: 26 HingeLoss: 78595.85335624676  
iteration: 27 HingeLoss: 61955.95691944342  
iteration: 28 HingeLoss: 40225.88342288957  
iteration: 29 HingeLoss: 43743.418807986964  
iteration: 30 HingeLoss: 34847.29033837246  
iteration: 31 HingeLoss: 56191.987140614496  
iteration: 32 HingeLoss: 35119.08526630292  
iteration: 33 HingeLoss: 60446.6205261219  
iteration: 34 HingeLoss: 32967.14013734934  
iteration: 35 HingeLoss: 52326.7630351777  
iteration: 36 HingeLoss: 31849.82430356474  
iteration: 37 HingeLoss: 38357.96734730931  
iteration: 38 HingeLoss: 22480.809185187383  
iteration: 39 HingeLoss: 69286.53194888243  
iteration: 40 HingeLoss: 51957.75642750217  
iteration: 41 HingeLoss: 68115.23305302678  
iteration: 42 HingeLoss: 31959.987366261743  
iteration: 43 HingeLoss: 40768.3104276025  
iteration: 44 HingeLoss: 22038.472201779205  
iteration: 45 HingeLoss: 40823.25787821665  
iteration: 46 HingeLoss: 31026.770886275357  
iteration: 47 HingeLoss: 25970.631518978924  
iteration: 48 HingeLoss: 49866.11937834477  
iteration: 49 HingeLoss: 16197.293960326726  
iteration: 50 HingeLoss: 45142.591335712495  
iteration: 51 HingeLoss: 87709.36882060266  
iteration: 52 HingeLoss: 43302.32689148939  
iteration: 53 HingeLoss: 72659.13433967295  
iteration: 54 HingeLoss: 49928.8627274706  
iteration: 55 HingeLoss: 27321.239275730244  
iteration: 56 HingeLoss: 27106.882149199693

# Output\_hinge\_train.txt

```

iteration: 57 HingeLoss: 24884.87175831404
iteration: 58 HingeLoss: 50452.85381220309
iteration: 59 HingeLoss: 48743.59240881531
iteration: 60 HingeLoss: 45592.542152192196
iteration: 61 HingeLoss: 76559.63942896816
iteration: 62 HingeLoss: 46499.19010605033
iteration: 63 HingeLoss: 64960.72296385249
iteration: 64 HingeLoss: 45496.97142373399
iteration: 65 HingeLoss: 31983.71386069072
iteration: 66 HingeLoss: 51094.31271465174
iteration: 67 HingeLoss: 54450.23336599064
iteration: 68 HingeLoss: 35452.97737307832
iteration: 69 HingeLoss: 31763.751140972956
iteration: 70 HingeLoss: 29430.449764114215
iteration: 71 HingeLoss: 56522.14581416543
iteration: 72 HingeLoss: 47980.88000403955
iteration: 73 HingeLoss: 41680.75639427468
iteration: 74 HingeLoss: 42794.99417469584
iteration: 75 HingeLoss: 20404.23401001716
iteration: 76 HingeLoss: 38326.112889992495
iteration: 77 HingeLoss: 71121.54061944658
iteration: 78 HingeLoss: 53974.89161008263
iteration: 79 HingeLoss: 30414.252749239626
iteration: 80 HingeLoss: 16522.063361783265
iteration: 81 HingeLoss: 26755.777642435445
iteration: 82 HingeLoss: 44990.054214075746
iteration: 83 HingeLoss: 44189.3451746479
iteration: 84 HingeLoss: 38513.623968712905
iteration: 85 HingeLoss: 70694.08281795925
iteration: 86 HingeLoss: 38937.311863902076
iteration: 87 HingeLoss: 28812.676024683235
iteration: 88 HingeLoss: 24757.926688101452
iteration: 89 HingeLoss: 80308.86036967553
iteration: 90 HingeLoss: 36289.12870929632
iteration: 91 HingeLoss: 37077.48864204297
iteration: 92 HingeLoss: 77274.47654517752
iteration: 93 HingeLoss: 42015.50832960054
iteration: 94 HingeLoss: 64000.63940585885
iteration: 95 HingeLoss: 40544.998908723195
iteration: 96 HingeLoss: 65889.72466095017
iteration: 97 HingeLoss: 33700.83251346143
iteration: 98 HingeLoss: 37410.54051467749
iteration: 99 HingeLoss: 30283.840584859972
[-0.20533113 -0.80435657 0.12011856 ... 0.00801223 0.03499325
0.05721466]

```

## CROSS VALIDATION 5

```

iteration: 0 HingeLoss: 34312.67670490477
iteration: 1 HingeLoss: 27952.135382311793
iteration: 2 HingeLoss: 35937.933116679844
iteration: 3 HingeLoss: 44369.64329382811
iteration: 4 HingeLoss: 49768.5469535117
iteration: 5 HingeLoss: 13632.528941577333

```

Output\_hinge\_train.txt

iteration: 6 HingeLoss: 51270.22231886167  
iteration: 7 HingeLoss: 31596.47161334523  
iteration: 8 HingeLoss: 61545.52067849091  
iteration: 9 HingeLoss: 42284.50213036577  
iteration: 10 HingeLoss: 65982.0861452541  
iteration: 11 HingeLoss: 35849.265983542624  
iteration: 12 HingeLoss: 35011.510363929134  
iteration: 13 HingeLoss: 27556.391302935044  
iteration: 14 HingeLoss: 26063.542064226924  
iteration: 15 HingeLoss: 24656.533424262074  
iteration: 16 HingeLoss: 17325.259852159914  
iteration: 17 HingeLoss: 48762.14196888172  
iteration: 18 HingeLoss: 21715.670182845817  
iteration: 19 HingeLoss: 75076.57328185652  
iteration: 20 HingeLoss: 22131.952582157024  
iteration: 21 HingeLoss: 29303.131961604784  
iteration: 22 HingeLoss: 49905.15467785018  
iteration: 23 HingeLoss: 33209.834457451245  
iteration: 24 HingeLoss: 38552.72794759507  
iteration: 25 HingeLoss: 31522.121323503823  
iteration: 26 HingeLoss: 37163.608847632815  
iteration: 27 HingeLoss: 51963.2963726694  
iteration: 28 HingeLoss: 32129.84809472796  
iteration: 29 HingeLoss: 54324.04351606571  
iteration: 30 HingeLoss: 9370.947516048029  
iteration: 31 HingeLoss: 46235.0910958819  
iteration: 32 HingeLoss: 21006.433646849946  
iteration: 33 HingeLoss: 50999.40341394366  
iteration: 34 HingeLoss: 35036.83598898876  
iteration: 35 HingeLoss: 42508.829598359254  
iteration: 36 HingeLoss: 5853.447334557076  
iteration: 37 HingeLoss: 29823.95243643569  
iteration: 38 HingeLoss: 45757.858567017094  
iteration: 39 HingeLoss: 44082.86047847969  
iteration: 40 HingeLoss: 39582.29553297933  
iteration: 41 HingeLoss: 50473.90424632266  
iteration: 42 HingeLoss: 32428.660110914356  
iteration: 43 HingeLoss: 33411.53964571609  
iteration: 44 HingeLoss: 62729.17751734187  
iteration: 45 HingeLoss: 32466.339698385535  
iteration: 46 HingeLoss: 17503.735322191493  
iteration: 47 HingeLoss: 83078.48311564133  
iteration: 48 HingeLoss: 40500.8715661797  
iteration: 49 HingeLoss: 68476.36745482944  
iteration: 50 HingeLoss: 46032.70263696226  
iteration: 51 HingeLoss: 32403.121117137292  
iteration: 52 HingeLoss: 38330.333339338584  
iteration: 53 HingeLoss: 36285.4199653168  
iteration: 54 HingeLoss: 27546.508292440416  
iteration: 55 HingeLoss: 49735.278358683194  
iteration: 56 HingeLoss: 24737.791321976572  
iteration: 57 HingeLoss: 47935.53179577027

# Output\_hinge\_train.txt

```

iteration: 58 HingeLoss: 25395.765296708374
iteration: 59 HingeLoss: 61328.89450664129
iteration: 60 HingeLoss: 31584.96802893652
iteration: 61 HingeLoss: 41172.03052380105
iteration: 62 HingeLoss: 28642.525269879046
iteration: 63 HingeLoss: 45192.668851321665
iteration: 64 HingeLoss: 110791.54939198376
iteration: 65 HingeLoss: 39606.98090735472
iteration: 66 HingeLoss: 109887.3960616657
iteration: 67 HingeLoss: 33758.67090373954
iteration: 68 HingeLoss: 47732.35252488178
iteration: 69 HingeLoss: 60472.64259775705
iteration: 70 HingeLoss: 10106.656138566155
iteration: 71 HingeLoss: 46257.77498384233
iteration: 72 HingeLoss: 21007.111038831215
iteration: 73 HingeLoss: 50999.47093825215
iteration: 74 HingeLoss: 35036.8355976846
iteration: 75 HingeLoss: 42508.829617781565
iteration: 76 HingeLoss: 5853.447337352036
iteration: 77 HingeLoss: 29823.95243643674
iteration: 78 HingeLoss: 45757.85856701787
iteration: 79 HingeLoss: 44082.86047847984
iteration: 80 HingeLoss: 39582.29553297933
iteration: 81 HingeLoss: 50473.90424632266
iteration: 82 HingeLoss: 32428.660110914356
iteration: 83 HingeLoss: 33411.53964571609
iteration: 84 HingeLoss: 62729.17751734187
iteration: 85 HingeLoss: 32466.339698385535
iteration: 86 HingeLoss: 17503.735322191493
iteration: 87 HingeLoss: 83078.48311564133
iteration: 88 HingeLoss: 40500.8715661797
iteration: 89 HingeLoss: 68476.36745482944
iteration: 90 HingeLoss: 46032.70263696226
iteration: 91 HingeLoss: 32403.121117137292
iteration: 92 HingeLoss: 38330.333339338584
iteration: 93 HingeLoss: 36285.4199653168
iteration: 94 HingeLoss: 27546.508292440416
iteration: 95 HingeLoss: 49735.278358683194
iteration: 96 HingeLoss: 24737.791321976572
iteration: 97 HingeLoss: 47935.53179577027
iteration: 98 HingeLoss: 25395.765296708374
iteration: 99 HingeLoss: 61328.89450664129
[-0.41662867 -0.21876042 0.08659924 ... 0.35026712 0.31002682
0.14914884]

```

## CROSS VALIDATION 6

```

iteration: 0 HingeLoss: 42212.617160399175
iteration: 1 HingeLoss: 116185.16291373216
iteration: 2 HingeLoss: 34897.9784535871
iteration: 3 HingeLoss: 97526.4441813237
iteration: 4 HingeLoss: 27001.351528371986
iteration: 5 HingeLoss: 50193.70288624508
iteration: 6 HingeLoss: 75898.32481726466

```

Output\_hinge\_train.txt

iteration: 7 HingeLoss: 57517.99061517684  
iteration: 8 HingeLoss: 59058.77816026324  
iteration: 9 HingeLoss: 42555.84961332145  
iteration: 10 HingeLoss: 55108.1436880468  
iteration: 11 HingeLoss: 40310.85118861628  
iteration: 12 HingeLoss: 52174.12536786191  
iteration: 13 HingeLoss: 31497.641896965408  
iteration: 14 HingeLoss: 14860.643347072139  
iteration: 15 HingeLoss: 44291.37141585799  
iteration: 16 HingeLoss: 42258.638820116576  
iteration: 17 HingeLoss: 88191.37143831066  
iteration: 18 HingeLoss: 37982.0555954763  
iteration: 19 HingeLoss: 27595.372929894656  
iteration: 20 HingeLoss: 49069.01301064227  
iteration: 21 HingeLoss: 26895.406091049073  
iteration: 22 HingeLoss: 48092.875438035815  
iteration: 23 HingeLoss: 26906.2476276635  
iteration: 24 HingeLoss: 48091.49503263084  
iteration: 25 HingeLoss: 26906.263001350355  
iteration: 26 HingeLoss: 48091.49307578039  
iteration: 27 HingeLoss: 26906.26302314404  
iteration: 28 HingeLoss: 48091.49307300637  
iteration: 29 HingeLoss: 26906.263023174935  
iteration: 30 HingeLoss: 48091.49307300245  
iteration: 31 HingeLoss: 26906.263023174986  
iteration: 32 HingeLoss: 48091.49307300244  
iteration: 33 HingeLoss: 26906.26302317498  
iteration: 34 HingeLoss: 48091.49307300244  
iteration: 35 HingeLoss: 26906.26302317498  
iteration: 36 HingeLoss: 48091.49307300244  
iteration: 37 HingeLoss: 26906.26302317498  
iteration: 38 HingeLoss: 48091.49307300244  
iteration: 39 HingeLoss: 26906.26302317498  
iteration: 40 HingeLoss: 48091.49307300244  
iteration: 41 HingeLoss: 26906.26302317498  
iteration: 42 HingeLoss: 48091.49307300244  
iteration: 43 HingeLoss: 26906.26302317498  
iteration: 44 HingeLoss: 48091.49307300244  
iteration: 45 HingeLoss: 26906.26302317498  
iteration: 46 HingeLoss: 48091.49307300244  
iteration: 47 HingeLoss: 26906.26302317498  
iteration: 48 HingeLoss: 48091.49307300244  
iteration: 49 HingeLoss: 26906.26302317498  
iteration: 50 HingeLoss: 48091.49307300244  
iteration: 51 HingeLoss: 26906.26302317498  
iteration: 52 HingeLoss: 48091.49307300244  
iteration: 53 HingeLoss: 26906.26302317498  
iteration: 54 HingeLoss: 48091.49307300244  
iteration: 55 HingeLoss: 26906.26302317498  
iteration: 56 HingeLoss: 48091.49307300244  
iteration: 57 HingeLoss: 26906.26302317498  
iteration: 58 HingeLoss: 48091.49307300244



Output\_hinge\_train.txt

```
iteration: 59 HingeLoss: 26906.26302317498
iteration: 60 HingeLoss: 48091.49307300244
iteration: 61 HingeLoss: 26906.26302317498
iteration: 62 HingeLoss: 48091.49307300244
iteration: 63 HingeLoss: 26906.26302317498
iteration: 64 HingeLoss: 48091.49307300244
iteration: 65 HingeLoss: 26906.26302317498
iteration: 66 HingeLoss: 48091.49307300244
iteration: 67 HingeLoss: 26906.26302317498
iteration: 68 HingeLoss: 48091.49307300244
iteration: 69 HingeLoss: 26906.26302317498
iteration: 70 HingeLoss: 48091.49307300244
iteration: 71 HingeLoss: 26906.26302317498
iteration: 72 HingeLoss: 48091.49307300244
iteration: 73 HingeLoss: 26906.26302317498
iteration: 74 HingeLoss: 48091.49307300244
iteration: 75 HingeLoss: 26906.26302317498
iteration: 76 HingeLoss: 48091.49307300244
iteration: 77 HingeLoss: 26906.26302317498
iteration: 78 HingeLoss: 48091.49307300244
iteration: 79 HingeLoss: 26906.26302317498
iteration: 80 HingeLoss: 48091.49307300244
iteration: 81 HingeLoss: 26906.26302317498
iteration: 82 HingeLoss: 48091.49307300244
iteration: 83 HingeLoss: 26906.26302317498
iteration: 84 HingeLoss: 48091.49307300244
iteration: 85 HingeLoss: 26906.26302317498
iteration: 86 HingeLoss: 48091.49307300244
iteration: 87 HingeLoss: 26906.26302317498
iteration: 88 HingeLoss: 48091.49307300244
iteration: 89 HingeLoss: 26906.26302317498
iteration: 90 HingeLoss: 48091.49307300244
iteration: 91 HingeLoss: 26906.26302317498
iteration: 92 HingeLoss: 48091.49307300244
iteration: 93 HingeLoss: 26906.26302317498
iteration: 94 HingeLoss: 48091.49307300244
iteration: 95 HingeLoss: 26906.26302317498
iteration: 96 HingeLoss: 48091.49307300244
iteration: 97 HingeLoss: 26906.26302317498
iteration: 98 HingeLoss: 48091.49307300244
iteration: 99 HingeLoss: 26906.26302317498
[-0.54842322 0.07276916 -0.35087363 ... 0.23764935 -0.09045332
 0.07036534]
```

CROSS VALIDATION 7

```
iteration: 0 HingeLoss: 42212.617160399175
iteration: 1 HingeLoss: 112601.84092344067
iteration: 2 HingeLoss: 34897.9784535871
iteration: 3 HingeLoss: 93109.9385567603
iteration: 4 HingeLoss: 27001.351528371986
iteration: 5 HingeLoss: 50193.70288624508
iteration: 6 HingeLoss: 75898.32481726466
iteration: 7 HingeLoss: 57517.99061517684
```

Output\_hinge\_train.txt

iteration: 8 HingeLoss: 59058.77816026324  
iteration: 9 HingeLoss: 42555.84961332145  
iteration: 10 HingeLoss: 55108.1436880468  
iteration: 11 HingeLoss: 40310.85118861628  
iteration: 12 HingeLoss: 55689.26903544598  
iteration: 13 HingeLoss: 31497.641896965408  
iteration: 14 HingeLoss: 14860.643347072139  
iteration: 15 HingeLoss: 44291.37141585799  
iteration: 16 HingeLoss: 42258.638820116576  
iteration: 17 HingeLoss: 85316.52015523241  
iteration: 18 HingeLoss: 37982.0555954763  
iteration: 19 HingeLoss: 27595.372929894656  
iteration: 20 HingeLoss: 49069.01301064227  
iteration: 21 HingeLoss: 26895.406091049073  
iteration: 22 HingeLoss: 48092.875438035815  
iteration: 23 HingeLoss: 26906.2476276635  
iteration: 24 HingeLoss: 48091.49503263084  
iteration: 25 HingeLoss: 26906.263001350355  
iteration: 26 HingeLoss: 48091.49307578039  
iteration: 27 HingeLoss: 26906.26302314404  
iteration: 28 HingeLoss: 48091.49307300637  
iteration: 29 HingeLoss: 26906.263023174935  
iteration: 30 HingeLoss: 48091.49307300245  
iteration: 31 HingeLoss: 26906.263023174986  
iteration: 32 HingeLoss: 48091.49307300244  
iteration: 33 HingeLoss: 26906.26302317498  
iteration: 34 HingeLoss: 48091.49307300244  
iteration: 35 HingeLoss: 26906.26302317498  
iteration: 36 HingeLoss: 48091.49307300244  
iteration: 37 HingeLoss: 26906.26302317498  
iteration: 38 HingeLoss: 48091.49307300244  
iteration: 39 HingeLoss: 26906.26302317498  
iteration: 40 HingeLoss: 48091.49307300244  
iteration: 41 HingeLoss: 26906.26302317498  
iteration: 42 HingeLoss: 48091.49307300244  
iteration: 43 HingeLoss: 26906.26302317498  
iteration: 44 HingeLoss: 48091.49307300244  
iteration: 45 HingeLoss: 26906.26302317498  
iteration: 46 HingeLoss: 48091.49307300244  
iteration: 47 HingeLoss: 26906.26302317498  
iteration: 48 HingeLoss: 48091.49307300244  
iteration: 49 HingeLoss: 26906.26302317498  
iteration: 50 HingeLoss: 48091.49307300244  
iteration: 51 HingeLoss: 26906.26302317498  
iteration: 52 HingeLoss: 48091.49307300244  
iteration: 53 HingeLoss: 26906.26302317498  
iteration: 54 HingeLoss: 48091.49307300244  
iteration: 55 HingeLoss: 26906.26302317498  
iteration: 56 HingeLoss: 48091.49307300244  
iteration: 57 HingeLoss: 26906.26302317498  
iteration: 58 HingeLoss: 48091.49307300244  
iteration: 59 HingeLoss: 26906.26302317498

Output\_hinge\_train.txt

```
iteration: 60 HingeLoss: 48091.49307300244
iteration: 61 HingeLoss: 26906.26302317498
iteration: 62 HingeLoss: 48091.49307300244
iteration: 63 HingeLoss: 26906.26302317498
iteration: 64 HingeLoss: 48091.49307300244
iteration: 65 HingeLoss: 26906.26302317498
iteration: 66 HingeLoss: 48091.49307300244
iteration: 67 HingeLoss: 26906.26302317498
iteration: 68 HingeLoss: 48091.49307300244
iteration: 69 HingeLoss: 26906.26302317498
iteration: 70 HingeLoss: 48091.49307300244
iteration: 71 HingeLoss: 26906.26302317498
iteration: 72 HingeLoss: 48091.49307300244
iteration: 73 HingeLoss: 26906.26302317498
iteration: 74 HingeLoss: 48091.49307300244
iteration: 75 HingeLoss: 26906.26302317498
iteration: 76 HingeLoss: 48091.49307300244
iteration: 77 HingeLoss: 26906.26302317498
iteration: 78 HingeLoss: 48091.49307300244
iteration: 79 HingeLoss: 26906.26302317498
iteration: 80 HingeLoss: 48091.49307300244
iteration: 81 HingeLoss: 26906.26302317498
iteration: 82 HingeLoss: 48091.49307300244
iteration: 83 HingeLoss: 26906.26302317498
iteration: 84 HingeLoss: 48091.49307300244
iteration: 85 HingeLoss: 26906.26302317498
iteration: 86 HingeLoss: 48091.49307300244
iteration: 87 HingeLoss: 26906.26302317498
iteration: 88 HingeLoss: 48091.49307300244
iteration: 89 HingeLoss: 26906.26302317498
iteration: 90 HingeLoss: 48091.49307300244
iteration: 91 HingeLoss: 26906.26302317498
iteration: 92 HingeLoss: 48091.49307300244
iteration: 93 HingeLoss: 26906.26302317498
iteration: 94 HingeLoss: 48091.49307300244
iteration: 95 HingeLoss: 26906.26302317498
iteration: 96 HingeLoss: 48091.49307300244
iteration: 97 HingeLoss: 26906.26302317498
iteration: 98 HingeLoss: 48091.49307300244
iteration: 99 HingeLoss: 26906.26302317498
[-0.54842322 0.07276916 -0.35087363 ... 0.23764935 -0.09045332
 0.07036534]
```

CROSS VALIDATION 8

```
iteration: 0 HingeLoss: 41017.76060783614
iteration: 1 HingeLoss: 33506.48893165993
iteration: 2 HingeLoss: 43541.78537118026
iteration: 3 HingeLoss: 35787.46568395763
iteration: 4 HingeLoss: 45207.46859999436
iteration: 5 HingeLoss: 31255.35127651667
iteration: 6 HingeLoss: 91469.85164194641
iteration: 7 HingeLoss: 38424.232217171695
iteration: 8 HingeLoss: 86040.44180565943
```

Output\_hinge\_train.txt

iteration: 9 HingeLoss: 38412.00167869458  
iteration: 10 HingeLoss: 86040.28847924853  
iteration: 11 HingeLoss: 38412.06046368483  
iteration: 12 HingeLoss: 86040.28826332166  
iteration: 13 HingeLoss: 38412.06054702023  
iteration: 14 HingeLoss: 86040.2882630156  
iteration: 15 HingeLoss: 38412.06054713836  
iteration: 16 HingeLoss: 86040.28826301514  
iteration: 17 HingeLoss: 38412.06054713852  
iteration: 18 HingeLoss: 86040.28826301514  
iteration: 19 HingeLoss: 38412.06054713852  
iteration: 20 HingeLoss: 86040.28826301514  
iteration: 21 HingeLoss: 38412.06054713852  
iteration: 22 HingeLoss: 86040.28826301514  
iteration: 23 HingeLoss: 38412.06054713852  
iteration: 24 HingeLoss: 86040.28826301514  
iteration: 25 HingeLoss: 38412.06054713852  
iteration: 26 HingeLoss: 86040.28826301514  
iteration: 27 HingeLoss: 38412.06054713852  
iteration: 28 HingeLoss: 86040.28826301514  
iteration: 29 HingeLoss: 38412.06054713852  
iteration: 30 HingeLoss: 86040.28826301514  
iteration: 31 HingeLoss: 38412.06054713852  
iteration: 32 HingeLoss: 86040.28826301514  
iteration: 33 HingeLoss: 38412.06054713852  
iteration: 34 HingeLoss: 86040.28826301514  
iteration: 35 HingeLoss: 38412.06054713852  
iteration: 36 HingeLoss: 86040.28826301514  
iteration: 37 HingeLoss: 38412.06054713852  
iteration: 38 HingeLoss: 86040.28826301514  
iteration: 39 HingeLoss: 38412.06054713852  
iteration: 40 HingeLoss: 86040.28826301514  
iteration: 41 HingeLoss: 38412.06054713852  
iteration: 42 HingeLoss: 86040.28826301514  
iteration: 43 HingeLoss: 38412.06054713852  
iteration: 44 HingeLoss: 86040.28826301514  
iteration: 45 HingeLoss: 38412.06054713852  
iteration: 46 HingeLoss: 86040.28826301514  
iteration: 47 HingeLoss: 38412.06054713852  
iteration: 48 HingeLoss: 86040.28826301514  
iteration: 49 HingeLoss: 38412.06054713852  
iteration: 50 HingeLoss: 86040.28826301514  
iteration: 51 HingeLoss: 38412.06054713852  
iteration: 52 HingeLoss: 86040.28826301514  
iteration: 53 HingeLoss: 38412.06054713852  
iteration: 54 HingeLoss: 86040.28826301514  
iteration: 55 HingeLoss: 38412.06054713852  
iteration: 56 HingeLoss: 86040.28826301514  
iteration: 57 HingeLoss: 38412.06054713852  
iteration: 58 HingeLoss: 86040.28826301514  
iteration: 59 HingeLoss: 38412.06054713852  
iteration: 60 HingeLoss: 86040.28826301514

# Output\_hinge\_train.txt

```

iteration: 61 HingeLoss: 38412.06054713852
iteration: 62 HingeLoss: 86040.28826301514
iteration: 63 HingeLoss: 38412.06054713852
iteration: 64 HingeLoss: 86040.28826301514
iteration: 65 HingeLoss: 38412.06054713852
iteration: 66 HingeLoss: 86040.28826301514
iteration: 67 HingeLoss: 38412.06054713852
iteration: 68 HingeLoss: 86040.28826301514
iteration: 69 HingeLoss: 38412.06054713852
iteration: 70 HingeLoss: 86040.28826301514
iteration: 71 HingeLoss: 38412.06054713852
iteration: 72 HingeLoss: 86040.28826301514
iteration: 73 HingeLoss: 38412.06054713852
iteration: 74 HingeLoss: 86040.28826301514
iteration: 75 HingeLoss: 38412.06054713852
iteration: 76 HingeLoss: 86040.28826301514
iteration: 77 HingeLoss: 38412.06054713852
iteration: 78 HingeLoss: 86040.28826301514
iteration: 79 HingeLoss: 38412.06054713852
iteration: 80 HingeLoss: 86040.28826301514
iteration: 81 HingeLoss: 38412.06054713852
iteration: 82 HingeLoss: 86040.28826301514
iteration: 83 HingeLoss: 38412.06054713852
iteration: 84 HingeLoss: 86040.28826301514
iteration: 85 HingeLoss: 38412.06054713852
iteration: 86 HingeLoss: 86040.28826301514
iteration: 87 HingeLoss: 38412.06054713852
iteration: 88 HingeLoss: 86040.28826301514
iteration: 89 HingeLoss: 38412.06054713852
iteration: 90 HingeLoss: 86040.28826301514
iteration: 91 HingeLoss: 38412.06054713852
iteration: 92 HingeLoss: 86040.28826301514
iteration: 93 HingeLoss: 38412.06054713852
iteration: 94 HingeLoss: 86040.28826301514
iteration: 95 HingeLoss: 38412.06054713852
iteration: 96 HingeLoss: 86040.28826301514
iteration: 97 HingeLoss: 38412.06054713852
iteration: 98 HingeLoss: 86040.28826301514
iteration: 99 HingeLoss: 38412.06054713852
[-0.07982941 -0.98562775 -0.00272251 ... 0.19843088 -0.45742601
-0.08099403]

```

## CROSS VALIDATION 9

```

iteration: 0 HingeLoss: 39264.5663429015
iteration: 1 HingeLoss: 37207.47832817375
iteration: 2 HingeLoss: 33495.511825233516
iteration: 3 HingeLoss: 55696.83078440687
iteration: 4 HingeLoss: 164.26441752668762
iteration: 5 HingeLoss: 59382.61989807492
iteration: 6 HingeLoss: 11741.70974212198
iteration: 7 HingeLoss: 53661.07614728384
iteration: 8 HingeLoss: 42474.30879931884
iteration: 9 HingeLoss: 63602.79678642706

```

Output\_hinge\_train.txt

iteration: 10 HingeLoss: 33754.50521344044  
iteration: 11 HingeLoss: 44696.2579012355  
iteration: 12 HingeLoss: 43693.63972298368  
iteration: 13 HingeLoss: 33341.06388847565  
iteration: 14 HingeLoss: 35165.28533677411  
iteration: 15 HingeLoss: 33605.36487992715  
iteration: 16 HingeLoss: 56701.02532919306  
iteration: 17 HingeLoss: 26524.019870411954  
iteration: 18 HingeLoss: 31546.306517527955  
iteration: 19 HingeLoss: 29948.130820602448  
iteration: 20 HingeLoss: 26013.56524174392  
iteration: 21 HingeLoss: 42142.99399178982  
iteration: 22 HingeLoss: 54244.97078379783  
iteration: 23 HingeLoss: 31220.096829106784  
iteration: 24 HingeLoss: 30855.170815367022  
iteration: 25 HingeLoss: 27561.29472924606  
iteration: 26 HingeLoss: 58654.66972418685  
iteration: 27 HingeLoss: 45957.80270794884  
iteration: 28 HingeLoss: 21672.61986159051  
iteration: 29 HingeLoss: 40278.54025496037  
iteration: 30 HingeLoss: 17730.195970478257  
iteration: 31 HingeLoss: 35044.87780140487  
iteration: 32 HingeLoss: 25140.401616352705  
iteration: 33 HingeLoss: 28959.319598124137  
iteration: 34 HingeLoss: 63375.278880555816  
iteration: 35 HingeLoss: 38127.703014723505  
iteration: 36 HingeLoss: 10051.741986549016  
iteration: 37 HingeLoss: 33567.964138254334  
iteration: 38 HingeLoss: 19592.117622587226  
iteration: 39 HingeLoss: 40276.2944986864  
iteration: 40 HingeLoss: 25875.55956921916  
iteration: 41 HingeLoss: 26824.95589030769  
iteration: 42 HingeLoss: 46544.10535135958  
iteration: 43 HingeLoss: 87402.6866372394  
iteration: 44 HingeLoss: 32981.40565769816  
iteration: 45 HingeLoss: 29602.502947553774  
iteration: 46 HingeLoss: 37885.84175221011  
iteration: 47 HingeLoss: 42631.46437649121  
iteration: 48 HingeLoss: 34770.4546252769  
iteration: 49 HingeLoss: 15385.861040750991  
iteration: 50 HingeLoss: 45045.52173495668  
iteration: 51 HingeLoss: 49546.32508708663  
iteration: 52 HingeLoss: 66115.20765947933  
iteration: 53 HingeLoss: 60262.107985539566  
iteration: 54 HingeLoss: 29236.669992214895  
iteration: 55 HingeLoss: 35901.25842337183  
iteration: 56 HingeLoss: 17955.81282872571  
iteration: 57 HingeLoss: 45421.95073141576  
iteration: 58 HingeLoss: 16388.04712246826  
iteration: 59 HingeLoss: 45033.56152271458  
iteration: 60 HingeLoss: 16422.318286820548  
iteration: 61 HingeLoss: 45033.01173169662

# Output\_hinge\_train.txt

```
iteration: 62 HingeLoss: 16422.366870603353
iteration: 63 HingeLoss: 45033.01095231666
iteration: 64 HingeLoss: 16422.366939475534
iteration: 65 HingeLoss: 45033.01095121181
iteration: 66 HingeLoss: 16422.366939573167
iteration: 67 HingeLoss: 45033.010951210235
iteration: 68 HingeLoss: 16422.3669395733
iteration: 69 HingeLoss: 45033.01095121022
iteration: 70 HingeLoss: 16422.366939573305
iteration: 71 HingeLoss: 45033.01095121022
iteration: 72 HingeLoss: 16422.366939573305
iteration: 73 HingeLoss: 45033.01095121022
iteration: 74 HingeLoss: 16422.366939573305
iteration: 75 HingeLoss: 45033.01095121022
iteration: 76 HingeLoss: 16422.366939573305
iteration: 77 HingeLoss: 45033.01095121022
iteration: 78 HingeLoss: 16422.366939573305
iteration: 79 HingeLoss: 45033.01095121022
iteration: 80 HingeLoss: 16422.366939573305
iteration: 81 HingeLoss: 45033.01095121022
iteration: 82 HingeLoss: 16422.366939573305
iteration: 83 HingeLoss: 45033.01095121022
iteration: 84 HingeLoss: 16422.366939573305
iteration: 85 HingeLoss: 45033.01095121022
iteration: 86 HingeLoss: 16422.366939573305
iteration: 87 HingeLoss: 45033.01095121022
iteration: 88 HingeLoss: 16422.366939573305
iteration: 89 HingeLoss: 45033.01095121022
iteration: 90 HingeLoss: 16422.366939573305
iteration: 91 HingeLoss: 45033.01095121022
iteration: 92 HingeLoss: 16422.366939573305
iteration: 93 HingeLoss: 45033.01095121022
iteration: 94 HingeLoss: 16422.366939573305
iteration: 95 HingeLoss: 45033.01095121022
iteration: 96 HingeLoss: 16422.366939573305
iteration: 97 HingeLoss: 45033.01095121022
iteration: 98 HingeLoss: 16422.366939573305
iteration: 99 HingeLoss: 45033.01095121022
[-0.02368004 -0.85275892 -0.1262475 ... 0.41272034 -0.46188979
-0.07627624]
```

## CROSS VALIDATION 10

```
iteration: 0 HingeLoss: 47137.329268861286
iteration: 1 HingeLoss: 41072.239541490686
iteration: 2 HingeLoss: 33548.194399352404
iteration: 3 HingeLoss: 89010.86512952477
iteration: 4 HingeLoss: 42195.63504446775
iteration: 5 HingeLoss: 44331.399666530735
iteration: 6 HingeLoss: 49506.778883356616
iteration: 7 HingeLoss: 87624.4598759053
iteration: 8 HingeLoss: 50181.30749393902
iteration: 9 HingeLoss: 23448.29573731013
iteration: 10 HingeLoss: 48608.33742430196
```

Output\_hinge\_train.txt

iteration: 11 HingeLoss: 33810.85016126505  
iteration: 12 HingeLoss: 70782.65460693333  
iteration: 13 HingeLoss: 36681.58591644806  
iteration: 14 HingeLoss: 55598.168675377165  
iteration: 15 HingeLoss: 22569.831074244037  
iteration: 16 HingeLoss: 67592.54675876643  
iteration: 17 HingeLoss: 47290.916779222425  
iteration: 18 HingeLoss: 65530.9419197289  
iteration: 19 HingeLoss: 46973.920931525055  
iteration: 20 HingeLoss: 29096.665115135067  
iteration: 21 HingeLoss: 62465.12014243922  
iteration: 22 HingeLoss: 40477.64311890528  
iteration: 23 HingeLoss: 49849.78736416826  
iteration: 24 HingeLoss: 21838.41621297005  
iteration: 25 HingeLoss: 41620.1069876559  
iteration: 26 HingeLoss: 31015.374107644893  
iteration: 27 HingeLoss: 52037.50862993713  
iteration: 28 HingeLoss: 39583.56744096523  
iteration: 29 HingeLoss: 68996.39449073082  
iteration: 30 HingeLoss: 28449.400953181408  
iteration: 31 HingeLoss: 65524.20045350383  
iteration: 32 HingeLoss: 31796.84216904008  
iteration: 33 HingeLoss: 39653.11937675862  
iteration: 34 HingeLoss: 39107.05908038538  
iteration: 35 HingeLoss: 34495.21231663166  
iteration: 36 HingeLoss: 38190.93173322557  
iteration: 37 HingeLoss: 45240.75795676734  
iteration: 38 HingeLoss: 33498.11436431999  
iteration: 39 HingeLoss: 45382.418729163124  
iteration: 40 HingeLoss: 26558.51806311596  
iteration: 41 HingeLoss: 64562.81957919792  
iteration: 42 HingeLoss: 34056.139852115135  
iteration: 43 HingeLoss: 67370.71258458013  
iteration: 44 HingeLoss: 29857.47055390896  
iteration: 45 HingeLoss: 36201.9869594701  
iteration: 46 HingeLoss: 53481.08873688671  
iteration: 47 HingeLoss: 33587.162707007985  
iteration: 48 HingeLoss: 55251.826869116114  
iteration: 49 HingeLoss: 27837.6534759233  
iteration: 50 HingeLoss: 34578.09805558116  
iteration: 51 HingeLoss: 30098.452217427868  
iteration: 52 HingeLoss: 49038.645216879224  
iteration: 53 HingeLoss: 44329.42831244749  
iteration: 54 HingeLoss: 42120.95972381517  
iteration: 55 HingeLoss: 64915.64864196754  
iteration: 56 HingeLoss: 47676.963316692934  
iteration: 57 HingeLoss: 40938.25216125972  
iteration: 58 HingeLoss: 30695.502904180474  
iteration: 59 HingeLoss: 36811.676819686145  
iteration: 60 HingeLoss: 96346.25379406847  
iteration: 61 HingeLoss: 27299.175962777947  
iteration: 62 HingeLoss: 41568.421812006345



# Output\_hinge\_train.txt

```

iteration: 63 HingeLoss: 59112.698006836996
iteration: 64 HingeLoss: 44718.32604549754
iteration: 65 HingeLoss: 41159.66102241752
iteration: 66 HingeLoss: 58114.78822358044
iteration: 67 HingeLoss: 43115.37943892063
iteration: 68 HingeLoss: 34390.61281382766
iteration: 69 HingeLoss: 41027.612910267926
iteration: 70 HingeLoss: 23052.913784109347
iteration: 71 HingeLoss: 71466.15533546053
iteration: 72 HingeLoss: 51954.92691358094
iteration: 73 HingeLoss: 68111.32784344238
iteration: 74 HingeLoss: 31849.530723042284
iteration: 75 HingeLoss: 29456.637564191085
iteration: 76 HingeLoss: 29845.43686909764
iteration: 77 HingeLoss: 42518.78684600463
iteration: 78 HingeLoss: 43627.63778694649
iteration: 79 HingeLoss: 49529.19747712031
iteration: 80 HingeLoss: 87624.18381066555
iteration: 81 HingeLoss: 50181.31184468327
iteration: 82 HingeLoss: 23448.294900232082
iteration: 83 HingeLoss: 48608.33754837575
iteration: 84 HingeLoss: 33810.85016208492
iteration: 85 HingeLoss: 70782.6546072132
iteration: 86 HingeLoss: 36681.585916445416
iteration: 87 HingeLoss: 55598.16867537713
iteration: 88 HingeLoss: 22569.83107424405
iteration: 89 HingeLoss: 67592.54675876643
iteration: 90 HingeLoss: 47290.916779222425
iteration: 91 HingeLoss: 65530.9419197289
iteration: 92 HingeLoss: 46973.920931525055
iteration: 93 HingeLoss: 29096.665115135067
iteration: 94 HingeLoss: 62465.12014243922
iteration: 95 HingeLoss: 40477.64311890528
iteration: 96 HingeLoss: 49849.78736416826
iteration: 97 HingeLoss: 21838.41621297005
iteration: 98 HingeLoss: 41620.1069876559
iteration: 99 HingeLoss: 31015.374107644893
[-0.16600938 -0.37518052 -0.42859796 ... 0.31479204 -0.34917462
0.03648492]

```

## CROSS VALIDATION 11

```

iteration: 0 HingeLoss: 42255.72699506271
iteration: 1 HingeLoss: 108583.73769514298
iteration: 2 HingeLoss: 34927.41266693035
iteration: 3 HingeLoss: 89769.62865691325
iteration: 4 HingeLoss: 47418.81554098091
iteration: 5 HingeLoss: 110828.57520801843
iteration: 6 HingeLoss: 36432.853826588565
iteration: 7 HingeLoss: 35708.78352379819
iteration: 8 HingeLoss: 46512.4726970724
iteration: 9 HingeLoss: 40988.099226941486
iteration: 10 HingeLoss: 28816.630784255918
iteration: 11 HingeLoss: 41380.496383882295

```

Output\_hinge\_train.txt

iteration: 12 HingeLoss: 27662.688513677742  
iteration: 13 HingeLoss: 49813.48799614792  
iteration: 14 HingeLoss: 24637.712022691816  
iteration: 15 HingeLoss: 24414.148087803005  
iteration: 16 HingeLoss: 28307.335034801137  
iteration: 17 HingeLoss: 28483.785625797373  
iteration: 18 HingeLoss: 26796.93967424738  
iteration: 19 HingeLoss: 76518.77723096516  
iteration: 20 HingeLoss: 45538.978677803294  
iteration: 21 HingeLoss: 46381.6516282561  
iteration: 22 HingeLoss: 48791.31119327481  
iteration: 23 HingeLoss: 42760.571986244184  
iteration: 24 HingeLoss: 45599.21755766951  
iteration: 25 HingeLoss: 34505.61305471095  
iteration: 26 HingeLoss: 23084.33795799363  
iteration: 27 HingeLoss: 57194.35041908828  
iteration: 28 HingeLoss: 44617.9816696273  
iteration: 29 HingeLoss: 62120.623096454845  
iteration: 30 HingeLoss: 30004.24574859911  
iteration: 31 HingeLoss: 40346.18747977282  
iteration: 32 HingeLoss: 51305.11187808026  
iteration: 33 HingeLoss: 38610.13141889128  
iteration: 34 HingeLoss: 71982.49866597474  
iteration: 35 HingeLoss: 31441.981330558323  
iteration: 36 HingeLoss: 57887.99388127992  
iteration: 37 HingeLoss: 44980.654523776786  
iteration: 38 HingeLoss: 40463.0677208008  
iteration: 39 HingeLoss: 28806.73820146254  
iteration: 40 HingeLoss: 41379.962188873484  
iteration: 41 HingeLoss: 27662.762301522205  
iteration: 42 HingeLoss: 49813.486673414984  
iteration: 43 HingeLoss: 24637.71199053456  
iteration: 44 HingeLoss: 24414.1480874326  
iteration: 45 HingeLoss: 28307.335034793574  
iteration: 46 HingeLoss: 28483.785625795746  
iteration: 47 HingeLoss: 26796.93967424736  
iteration: 48 HingeLoss: 76518.77723096518  
iteration: 49 HingeLoss: 45538.978677803294  
iteration: 50 HingeLoss: 46381.6516282561  
iteration: 51 HingeLoss: 48791.31119327481  
iteration: 52 HingeLoss: 42760.571986244184  
iteration: 53 HingeLoss: 45599.21755766951  
iteration: 54 HingeLoss: 34505.61305471095  
iteration: 55 HingeLoss: 23084.33795799363  
iteration: 56 HingeLoss: 57194.35041908828  
iteration: 57 HingeLoss: 44617.9816696273  
iteration: 58 HingeLoss: 62120.623096454845  
iteration: 59 HingeLoss: 30004.24574859911  
iteration: 60 HingeLoss: 40346.18747977282  
iteration: 61 HingeLoss: 51305.11187808026  
iteration: 62 HingeLoss: 38610.13141889128  
iteration: 63 HingeLoss: 71982.49866597474

# Output\_hinge\_train.txt

```
iteration: 64 HingeLoss: 31441.981330558323
iteration: 65 HingeLoss: 57887.99388127992
iteration: 66 HingeLoss: 44980.654523776786
iteration: 67 HingeLoss: 40463.0677208008
iteration: 68 HingeLoss: 28806.73820146254
iteration: 69 HingeLoss: 41379.962188873484
iteration: 70 HingeLoss: 27662.762301522205
iteration: 71 HingeLoss: 49813.486673414984
iteration: 72 HingeLoss: 24637.71199053456
iteration: 73 HingeLoss: 24414.1480874326
iteration: 74 HingeLoss: 28307.335034793574
iteration: 75 HingeLoss: 28483.785625795746
iteration: 76 HingeLoss: 26796.93967424736
iteration: 77 HingeLoss: 76518.77723096518
iteration: 78 HingeLoss: 45538.978677803294
iteration: 79 HingeLoss: 46381.6516282561
iteration: 80 HingeLoss: 48791.31119327481
iteration: 81 HingeLoss: 42760.571986244184
iteration: 82 HingeLoss: 45599.21755766951
iteration: 83 HingeLoss: 34505.61305471095
iteration: 84 HingeLoss: 23084.33795799363
iteration: 85 HingeLoss: 57194.35041908828
iteration: 86 HingeLoss: 44617.9816696273
iteration: 87 HingeLoss: 62120.623096454845
iteration: 88 HingeLoss: 30004.24574859911
iteration: 89 HingeLoss: 40346.18747977282
iteration: 90 HingeLoss: 51305.11187808026
iteration: 91 HingeLoss: 38610.13141889128
iteration: 92 HingeLoss: 71982.49866597474
iteration: 93 HingeLoss: 31441.981330558323
iteration: 94 HingeLoss: 57887.99388127992
iteration: 95 HingeLoss: 44980.654523776786
iteration: 96 HingeLoss: 40463.0677208008
iteration: 97 HingeLoss: 28806.73820146254
iteration: 98 HingeLoss: 41379.962188873484
iteration: 99 HingeLoss: 27662.762301522205
[-0.03696105 -0.77142167 0.26438046 ... 0.05478568 0.00117589
0.02713711]
```

## CROSS VALIDATION 12

```
iteration: 0 HingeLoss: 34105.99414808105
iteration: 1 HingeLoss: 11250.15118746205
iteration: 2 HingeLoss: 53248.84735768712
iteration: 3 HingeLoss: 24799.551717428218
iteration: 4 HingeLoss: 43608.14686226216
iteration: 5 HingeLoss: 37582.74184769648
iteration: 6 HingeLoss: 30771.470229470546
iteration: 7 HingeLoss: 72000.64744480826
iteration: 8 HingeLoss: 56676.56568901714
iteration: 9 HingeLoss: 51897.29854495268
iteration: 10 HingeLoss: 18914.463757400008
iteration: 11 HingeLoss: 43199.275357143146
iteration: 12 HingeLoss: 34488.28281147101
```

Output\_hinge\_train.txt

iteration: 13 HingeLoss: 42295.12873857955  
iteration: 14 HingeLoss: 34630.495815361566  
iteration: 15 HingeLoss: 25103.971785883376  
iteration: 16 HingeLoss: 33312.266416462146  
iteration: 17 HingeLoss: 24120.774475655675  
iteration: 18 HingeLoss: 40198.2697445842  
iteration: 19 HingeLoss: 27745.098427765814  
iteration: 20 HingeLoss: 61196.952102596246  
iteration: 21 HingeLoss: 33679.56101801118  
iteration: 22 HingeLoss: 43949.3079027117  
iteration: 23 HingeLoss: 42033.00172731244  
iteration: 24 HingeLoss: 46469.30550789143  
iteration: 25 HingeLoss: 65425.887542692486  
iteration: 26 HingeLoss: 39369.17384856337  
iteration: 27 HingeLoss: 30892.331156751367  
iteration: 28 HingeLoss: 72020.93912828482  
iteration: 29 HingeLoss: 56676.924747268466  
iteration: 30 HingeLoss: 51897.29990357299  
iteration: 31 HingeLoss: 18914.463848881744  
iteration: 32 HingeLoss: 43199.27538036844  
iteration: 33 HingeLoss: 34488.282813558515  
iteration: 34 HingeLoss: 42295.128738595  
iteration: 35 HingeLoss: 34630.49581536478  
iteration: 36 HingeLoss: 25103.971785883332  
iteration: 37 HingeLoss: 33312.266416462146  
iteration: 38 HingeLoss: 24120.774475655675  
iteration: 39 HingeLoss: 40198.2697445842  
iteration: 40 HingeLoss: 27745.098427765814  
iteration: 41 HingeLoss: 61196.952102596246  
iteration: 42 HingeLoss: 33679.56101801118  
iteration: 43 HingeLoss: 43949.3079027117  
iteration: 44 HingeLoss: 42033.00172731244  
iteration: 45 HingeLoss: 46469.30550789143  
iteration: 46 HingeLoss: 65425.887542692486  
iteration: 47 HingeLoss: 39369.17384856337  
iteration: 48 HingeLoss: 30892.331156751367  
iteration: 49 HingeLoss: 72020.93912828482  
iteration: 50 HingeLoss: 56676.924747268466  
iteration: 51 HingeLoss: 51897.29990357299  
iteration: 52 HingeLoss: 18914.463848881744  
iteration: 53 HingeLoss: 43199.27538036844  
iteration: 54 HingeLoss: 34488.282813558515  
iteration: 55 HingeLoss: 42295.128738595  
iteration: 56 HingeLoss: 34630.49581536478  
iteration: 57 HingeLoss: 25103.971785883332  
iteration: 58 HingeLoss: 33312.266416462146  
iteration: 59 HingeLoss: 24120.774475655675  
iteration: 60 HingeLoss: 40198.2697445842  
iteration: 61 HingeLoss: 27745.098427765814  
iteration: 62 HingeLoss: 61196.952102596246  
iteration: 63 HingeLoss: 33679.56101801118  
iteration: 64 HingeLoss: 43949.3079027117

# Output\_hinge\_train.txt

```

iteration: 65 HingeLoss: 42033.00172731244
iteration: 66 HingeLoss: 46469.30550789143
iteration: 67 HingeLoss: 65425.887542692486
iteration: 68 HingeLoss: 39369.17384856337
iteration: 69 HingeLoss: 30892.331156751367
iteration: 70 HingeLoss: 72020.93912828482
iteration: 71 HingeLoss: 56676.924747268466
iteration: 72 HingeLoss: 51897.29990357299
iteration: 73 HingeLoss: 18914.463848881744
iteration: 74 HingeLoss: 43199.27538036844
iteration: 75 HingeLoss: 34488.282813558515
iteration: 76 HingeLoss: 42295.128738595
iteration: 77 HingeLoss: 34630.49581536478
iteration: 78 HingeLoss: 25103.971785883332
iteration: 79 HingeLoss: 33312.266416462146
iteration: 80 HingeLoss: 24120.774475655675
iteration: 81 HingeLoss: 40198.2697445842
iteration: 82 HingeLoss: 27745.098427765814
iteration: 83 HingeLoss: 61196.952102596246
iteration: 84 HingeLoss: 33679.56101801118
iteration: 85 HingeLoss: 43949.3079027117
iteration: 86 HingeLoss: 42033.00172731244
iteration: 87 HingeLoss: 46469.30550789143
iteration: 88 HingeLoss: 65425.887542692486
iteration: 89 HingeLoss: 39369.17384856337
iteration: 90 HingeLoss: 30892.331156751367
iteration: 91 HingeLoss: 72020.93912828482
iteration: 92 HingeLoss: 56676.924747268466
iteration: 93 HingeLoss: 51897.29990357299
iteration: 94 HingeLoss: 18914.463848881744
iteration: 95 HingeLoss: 43199.27538036844
iteration: 96 HingeLoss: 34488.282813558515
iteration: 97 HingeLoss: 42295.128738595
iteration: 98 HingeLoss: 34630.49581536478
iteration: 99 HingeLoss: 25103.971785883332
[ 0.01813501 -0.27503637 0.3439869 ... -0.21577949 0.24774911
 0.0611819 ]

```

## CROSS VALIDATION 13

```

iteration: 0 HingeLoss: 39786.29337878313
iteration: 1 HingeLoss: 116397.70297109307
iteration: 2 HingeLoss: 36503.191901696686
iteration: 3 HingeLoss: 40221.319187663175
iteration: 4 HingeLoss: 26948.394148791627
iteration: 5 HingeLoss: 51237.60218626594
iteration: 6 HingeLoss: 51173.04224214886
iteration: 7 HingeLoss: 27911.978454852182
iteration: 8 HingeLoss: 48183.87738860025
iteration: 9 HingeLoss: 54655.28357051437
iteration: 10 HingeLoss: 50860.147249266694
iteration: 11 HingeLoss: 31257.01469937984
iteration: 12 HingeLoss: 47339.00220990228
iteration: 13 HingeLoss: 40497.532146505524

```

Output\_hinge\_train.txt

iteration: 14 HingeLoss: 41594.35169592189  
iteration: 15 HingeLoss: 51153.89648501286  
iteration: 16 HingeLoss: 47894.27011821485  
iteration: 17 HingeLoss: 28728.232346300647  
iteration: 18 HingeLoss: 49876.764174759766  
iteration: 19 HingeLoss: 38434.5100892724  
iteration: 20 HingeLoss: 30171.156135718382  
iteration: 21 HingeLoss: 48628.88964839281  
iteration: 22 HingeLoss: 41261.67494363035  
iteration: 23 HingeLoss: 31189.755404935604  
iteration: 24 HingeLoss: 63091.509313669405  
iteration: 25 HingeLoss: 51979.70592690545  
iteration: 26 HingeLoss: 80004.31770858185  
iteration: 27 HingeLoss: 42237.21985767931  
iteration: 28 HingeLoss: 50410.00423306058  
iteration: 29 HingeLoss: 28256.160366764074  
iteration: 30 HingeLoss: 33374.00148750644  
iteration: 31 HingeLoss: 51028.5550102793  
iteration: 32 HingeLoss: 45129.91497370704  
iteration: 33 HingeLoss: 51013.62998224491  
iteration: 34 HingeLoss: 67912.49274840887  
iteration: 35 HingeLoss: 36639.45489507919  
iteration: 36 HingeLoss: 55418.647608215266  
iteration: 37 HingeLoss: 29901.16470181833  
iteration: 38 HingeLoss: 38278.64724330272  
iteration: 39 HingeLoss: 49386.76207884293  
iteration: 40 HingeLoss: 39896.53625834279  
iteration: 41 HingeLoss: 44237.7339080765  
iteration: 42 HingeLoss: 37689.3633382557  
iteration: 43 HingeLoss: 6856.400664311414  
iteration: 44 HingeLoss: 59241.30164210642  
iteration: 45 HingeLoss: 42393.5288192421  
iteration: 46 HingeLoss: 33576.44042588925  
iteration: 47 HingeLoss: 31346.266181854917  
iteration: 48 HingeLoss: 87360.75301668383  
iteration: 49 HingeLoss: 59362.98822841777  
iteration: 50 HingeLoss: 29849.590906090532  
iteration: 51 HingeLoss: 43985.27316515859  
iteration: 52 HingeLoss: 65740.65854533792  
iteration: 53 HingeLoss: 26836.40177099814  
iteration: 54 HingeLoss: 52040.98152098828  
iteration: 55 HingeLoss: 45362.40323162244  
iteration: 56 HingeLoss: 32216.226268431907  
iteration: 57 HingeLoss: 60725.81199960764  
iteration: 58 HingeLoss: 25803.834950347915  
iteration: 59 HingeLoss: 51901.21540018965  
iteration: 60 HingeLoss: 45197.570052795956  
iteration: 61 HingeLoss: 28973.672263535547  
iteration: 62 HingeLoss: 26570.299158270136  
iteration: 63 HingeLoss: 42131.810072182925  
iteration: 64 HingeLoss: 30528.384016989465  
iteration: 65 HingeLoss: 41682.79480581421

# Output\_hinge\_train.txt

```

iteration: 66 HingeLoss: 41563.88907235872
iteration: 67 HingeLoss: 49022.36738679697
iteration: 68 HingeLoss: 25733.39314838085
iteration: 69 HingeLoss: 27879.589449950956
iteration: 70 HingeLoss: 50846.10129768592
iteration: 71 HingeLoss: 34938.93478534884
iteration: 72 HingeLoss: 9234.820027492182
iteration: 73 HingeLoss: 41776.79651772361
iteration: 74 HingeLoss: 30425.91272430683
iteration: 75 HingeLoss: 50804.55423453384
iteration: 76 HingeLoss: 32112.13045428763
iteration: 77 HingeLoss: 49527.18251514683
iteration: 78 HingeLoss: 30436.580172155474
iteration: 79 HingeLoss: 52095.925191704606
iteration: 80 HingeLoss: 31042.626683171893
iteration: 81 HingeLoss: 49569.986251716844
iteration: 82 HingeLoss: 34911.62288172233
iteration: 83 HingeLoss: 9234.88766095746
iteration: 84 HingeLoss: 41776.75036439032
iteration: 85 HingeLoss: 30425.91312712855
iteration: 86 HingeLoss: 50804.554159622196
iteration: 87 HingeLoss: 32112.130455311006
iteration: 88 HingeLoss: 49527.182515322056
iteration: 89 HingeLoss: 30436.58017215583
iteration: 90 HingeLoss: 52095.92519170485
iteration: 91 HingeLoss: 31042.626683171893
iteration: 92 HingeLoss: 49569.986251716844
iteration: 93 HingeLoss: 34911.62288172233
iteration: 94 HingeLoss: 9234.88766095746
iteration: 95 HingeLoss: 41776.75036439032
iteration: 96 HingeLoss: 30425.91312712855
iteration: 97 HingeLoss: 50804.554159622196
iteration: 98 HingeLoss: 32112.130455311006
iteration: 99 HingeLoss: 49527.182515322056
[-0.0654931 -0.75266922 -0.08588768 ... 0.43904273 -0.48510409
-0.06830764]

```

## CROSS VALIDATION 14

```

iteration: 0 HingeLoss: 39463.875229124285
iteration: 1 HingeLoss: 114446.34761930868
iteration: 2 HingeLoss: 33182.74635213636
iteration: 3 HingeLoss: 21027.884531277345
iteration: 4 HingeLoss: 35491.525388604336
iteration: 5 HingeLoss: 31809.69226095655
iteration: 6 HingeLoss: 40911.99873849709
iteration: 7 HingeLoss: 46297.128252904695
iteration: 8 HingeLoss: 31994.82606858147
iteration: 9 HingeLoss: 35470.69241487775
iteration: 10 HingeLoss: 40630.7324075429
iteration: 11 HingeLoss: 24543.04089390037
iteration: 12 HingeLoss: 43310.62396872645
iteration: 13 HingeLoss: 52114.55999189405
iteration: 14 HingeLoss: 46218.77794960998

```

Output\_hinge\_train.txt

iteration: 15 HingeLoss: 43953.10368865921  
iteration: 16 HingeLoss: 26358.048473398587  
iteration: 17 HingeLoss: 41608.704498582905  
iteration: 18 HingeLoss: 40226.36496461924  
iteration: 19 HingeLoss: 46908.144013564495  
iteration: 20 HingeLoss: 11135.410796782318  
iteration: 21 HingeLoss: 55466.29140936734  
iteration: 22 HingeLoss: 42480.801391019755  
iteration: 23 HingeLoss: 62135.409127721905  
iteration: 24 HingeLoss: 27538.45114767547  
iteration: 25 HingeLoss: 40500.636864546796  
iteration: 26 HingeLoss: 62467.029027870405  
iteration: 27 HingeLoss: 40499.58614213014  
iteration: 28 HingeLoss: 45203.07073218417  
iteration: 29 HingeLoss: 43949.005159087545  
iteration: 30 HingeLoss: 26356.565074159873  
iteration: 31 HingeLoss: 41608.66016133378  
iteration: 32 HingeLoss: 40226.36441001395  
iteration: 33 HingeLoss: 46908.1439508208  
iteration: 34 HingeLoss: 11135.41079604203  
iteration: 35 HingeLoss: 55466.29140927849  
iteration: 36 HingeLoss: 42480.801391019544  
iteration: 37 HingeLoss: 62135.40912772184  
iteration: 38 HingeLoss: 27538.45114767547  
iteration: 39 HingeLoss: 40500.636864546796  
iteration: 40 HingeLoss: 62467.029027870405  
iteration: 41 HingeLoss: 40499.58614213014  
iteration: 42 HingeLoss: 45203.07073218417  
iteration: 43 HingeLoss: 43949.005159087545  
iteration: 44 HingeLoss: 26356.565074159873  
iteration: 45 HingeLoss: 41608.66016133378  
iteration: 46 HingeLoss: 40226.36441001395  
iteration: 47 HingeLoss: 46908.1439508208  
iteration: 48 HingeLoss: 11135.41079604203  
iteration: 49 HingeLoss: 55466.29140927849  
iteration: 50 HingeLoss: 42480.801391019544  
iteration: 51 HingeLoss: 62135.40912772184  
iteration: 52 HingeLoss: 27538.45114767547  
iteration: 53 HingeLoss: 40500.636864546796  
iteration: 54 HingeLoss: 62467.029027870405  
iteration: 55 HingeLoss: 40499.58614213014  
iteration: 56 HingeLoss: 45203.07073218417  
iteration: 57 HingeLoss: 43949.005159087545  
iteration: 58 HingeLoss: 26356.565074159873  
iteration: 59 HingeLoss: 41608.66016133378  
iteration: 60 HingeLoss: 40226.36441001395  
iteration: 61 HingeLoss: 46908.1439508208  
iteration: 62 HingeLoss: 11135.41079604203  
iteration: 63 HingeLoss: 55466.29140927849  
iteration: 64 HingeLoss: 42480.801391019544  
iteration: 65 HingeLoss: 62135.40912772184  
iteration: 66 HingeLoss: 27538.45114767547



# Output\_hinge\_train.txt

```

iteration: 67 HingeLoss: 40500.636864546796
iteration: 68 HingeLoss: 62467.029027870405
iteration: 69 HingeLoss: 40499.58614213014
iteration: 70 HingeLoss: 45203.07073218417
iteration: 71 HingeLoss: 43949.005159087545
iteration: 72 HingeLoss: 26356.565074159873
iteration: 73 HingeLoss: 41608.66016133378
iteration: 74 HingeLoss: 40226.36441001395
iteration: 75 HingeLoss: 46908.1439508208
iteration: 76 HingeLoss: 11135.41079604203
iteration: 77 HingeLoss: 55466.29140927849
iteration: 78 HingeLoss: 42480.801391019544
iteration: 79 HingeLoss: 62135.40912772184
iteration: 80 HingeLoss: 27538.45114767547
iteration: 81 HingeLoss: 40500.636864546796
iteration: 82 HingeLoss: 62467.029027870405
iteration: 83 HingeLoss: 40499.58614213014
iteration: 84 HingeLoss: 45203.07073218417
iteration: 85 HingeLoss: 43949.005159087545
iteration: 86 HingeLoss: 26356.565074159873
iteration: 87 HingeLoss: 41608.66016133378
iteration: 88 HingeLoss: 40226.36441001395
iteration: 89 HingeLoss: 46908.1439508208
iteration: 90 HingeLoss: 11135.41079604203
iteration: 91 HingeLoss: 55466.29140927849
iteration: 92 HingeLoss: 42480.801391019544
iteration: 93 HingeLoss: 62135.40912772184
iteration: 94 HingeLoss: 27538.45114767547
iteration: 95 HingeLoss: 40500.636864546796
iteration: 96 HingeLoss: 62467.029027870405
iteration: 97 HingeLoss: 40499.58614213014
iteration: 98 HingeLoss: 45203.07073218417
iteration: 99 HingeLoss: 43949.005159087545
[-0.40134458 -0.67643458 -0.6379449 ... 0.44848712 -0.58418899
-0.03073039]

```

## CROSS VALIDATION 15

```

iteration: 0 HingeLoss: 42243.02883140558
iteration: 1 HingeLoss: 112858.16582398073
iteration: 2 HingeLoss: 33286.079539190156
iteration: 3 HingeLoss: 47544.127401557875
iteration: 4 HingeLoss: 62051.761885869106
iteration: 5 HingeLoss: 37036.98355990154
iteration: 6 HingeLoss: 33900.085995549955
iteration: 7 HingeLoss: 56446.15255653489
iteration: 8 HingeLoss: 9272.402547555303
iteration: 9 HingeLoss: 51500.51103482998
iteration: 10 HingeLoss: 19898.332037192988
iteration: 11 HingeLoss: 41293.60237468206
iteration: 12 HingeLoss: 30873.884975105193
iteration: 13 HingeLoss: 51165.5594367157
iteration: 14 HingeLoss: 32141.87136901491
iteration: 15 HingeLoss: 38386.90586712033

```

Output\_hinge\_train.txt

iteration: 16 HingeLoss: 49366.39230416159  
iteration: 17 HingeLoss: 30014.072512497663  
iteration: 18 HingeLoss: 41571.6696128937  
iteration: 19 HingeLoss: 55306.55353320785  
iteration: 20 HingeLoss: 43658.09480249349  
iteration: 21 HingeLoss: 21100.93795442725  
iteration: 22 HingeLoss: 58426.67409233899  
iteration: 23 HingeLoss: 20655.29886938759  
iteration: 24 HingeLoss: 38763.74505601981  
iteration: 25 HingeLoss: 69773.03706170796  
iteration: 26 HingeLoss: 45860.123888910704  
iteration: 27 HingeLoss: 24943.597830851482  
iteration: 28 HingeLoss: 47990.473712553256  
iteration: 29 HingeLoss: 30039.412141541172  
iteration: 30 HingeLoss: 41573.743282250005  
iteration: 31 HingeLoss: 55306.27963618035  
iteration: 32 HingeLoss: 43658.09592521495  
iteration: 33 HingeLoss: 21100.93810077244  
iteration: 34 HingeLoss: 58426.67408617189  
iteration: 35 HingeLoss: 20655.298869112652  
iteration: 36 HingeLoss: 38763.745056032516  
iteration: 37 HingeLoss: 69773.03706170697  
iteration: 38 HingeLoss: 45860.12388891068  
iteration: 39 HingeLoss: 24943.597830851482  
iteration: 40 HingeLoss: 47990.473712553256  
iteration: 41 HingeLoss: 30039.412141541172  
iteration: 42 HingeLoss: 41573.743282250005  
iteration: 43 HingeLoss: 55306.27963618035  
iteration: 44 HingeLoss: 43658.09592521495  
iteration: 45 HingeLoss: 21100.93810077244  
iteration: 46 HingeLoss: 58426.67408617189  
iteration: 47 HingeLoss: 20655.298869112652  
iteration: 48 HingeLoss: 38763.745056032516  
iteration: 49 HingeLoss: 69773.03706170697  
iteration: 50 HingeLoss: 45860.12388891068  
iteration: 51 HingeLoss: 24943.597830851482  
iteration: 52 HingeLoss: 47990.473712553256  
iteration: 53 HingeLoss: 30039.412141541172  
iteration: 54 HingeLoss: 41573.743282250005  
iteration: 55 HingeLoss: 55306.27963618035  
iteration: 56 HingeLoss: 43658.09592521495  
iteration: 57 HingeLoss: 21100.93810077244  
iteration: 58 HingeLoss: 58426.67408617189  
iteration: 59 HingeLoss: 20655.298869112652  
iteration: 60 HingeLoss: 38763.745056032516  
iteration: 61 HingeLoss: 69773.03706170697  
iteration: 62 HingeLoss: 45860.12388891068  
iteration: 63 HingeLoss: 24943.597830851482  
iteration: 64 HingeLoss: 47990.473712553256  
iteration: 65 HingeLoss: 30039.412141541172  
iteration: 66 HingeLoss: 41573.743282250005  
iteration: 67 HingeLoss: 55306.27963618035

# Output\_hinge\_train.txt

```

iteration: 68 HingeLoss: 43658.09592521495
iteration: 69 HingeLoss: 21100.93810077244
iteration: 70 HingeLoss: 58426.67408617189
iteration: 71 HingeLoss: 20655.298869112652
iteration: 72 HingeLoss: 38763.745056032516
iteration: 73 HingeLoss: 69773.03706170697
iteration: 74 HingeLoss: 45860.12388891068
iteration: 75 HingeLoss: 24943.597830851482
iteration: 76 HingeLoss: 47990.473712553256
iteration: 77 HingeLoss: 30039.412141541172
iteration: 78 HingeLoss: 41573.743282250005
iteration: 79 HingeLoss: 55306.27963618035
iteration: 80 HingeLoss: 43658.09592521495
iteration: 81 HingeLoss: 21100.93810077244
iteration: 82 HingeLoss: 58426.67408617189
iteration: 83 HingeLoss: 20655.298869112652
iteration: 84 HingeLoss: 38763.745056032516
iteration: 85 HingeLoss: 69773.03706170697
iteration: 86 HingeLoss: 45860.12388891068
iteration: 87 HingeLoss: 24943.597830851482
iteration: 88 HingeLoss: 47990.473712553256
iteration: 89 HingeLoss: 30039.412141541172
iteration: 90 HingeLoss: 41573.743282250005
iteration: 91 HingeLoss: 55306.27963618035
iteration: 92 HingeLoss: 43658.09592521495
iteration: 93 HingeLoss: 21100.93810077244
iteration: 94 HingeLoss: 58426.67408617189
iteration: 95 HingeLoss: 20655.298869112652
iteration: 96 HingeLoss: 38763.745056032516
iteration: 97 HingeLoss: 69773.03706170697
iteration: 98 HingeLoss: 45860.12388891068
iteration: 99 HingeLoss: 24943.597830851482
[-0.48654485  0.00470411 -0.13572836 ...  0.30626717 -0.1883139
 0.05919059]

```

## CROSS VALIDATION 16

```

iteration: 0 HingeLoss: 42243.02883140558
iteration: 1 HingeLoss: 55854.55196399749
iteration: 2 HingeLoss: 41822.240622886406
iteration: 3 HingeLoss: 38276.83032464798
iteration: 4 HingeLoss: 26058.950630804782
iteration: 5 HingeLoss: 100419.23123530076
iteration: 6 HingeLoss: 37397.937446602155
iteration: 7 HingeLoss: 103207.30610078867
iteration: 8 HingeLoss: 35206.30314154714
iteration: 9 HingeLoss: 25892.877154802583
iteration: 10 HingeLoss: 59568.20362980271
iteration: 11 HingeLoss: 36780.11747307499
iteration: 12 HingeLoss: 31752.028891326554
iteration: 13 HingeLoss: 56446.12469666587
iteration: 14 HingeLoss: 31204.81862351091
iteration: 15 HingeLoss: 47917.10304694792
iteration: 16 HingeLoss: 36083.014697103514

```

Output\_hinge\_train.txt

iteration: 17 HingeLoss: 31723.5891428668  
iteration: 18 HingeLoss: 56445.9499341854  
iteration: 19 HingeLoss: 31204.818874495148  
iteration: 20 HingeLoss: 47917.10275988663  
iteration: 21 HingeLoss: 36083.01464436707  
iteration: 22 HingeLoss: 31723.589140714983  
iteration: 23 HingeLoss: 56445.94993417217  
iteration: 24 HingeLoss: 31204.81887449517  
iteration: 25 HingeLoss: 47917.10275988659  
iteration: 26 HingeLoss: 36083.01464436707  
iteration: 27 HingeLoss: 31723.589140714983  
iteration: 28 HingeLoss: 56445.94993417217  
iteration: 29 HingeLoss: 31204.81887449517  
iteration: 30 HingeLoss: 47917.10275988659  
iteration: 31 HingeLoss: 36083.01464436707  
iteration: 32 HingeLoss: 31723.589140714983  
iteration: 33 HingeLoss: 56445.94993417217  
iteration: 34 HingeLoss: 31204.81887449517  
iteration: 35 HingeLoss: 47917.10275988659  
iteration: 36 HingeLoss: 36083.01464436707  
iteration: 37 HingeLoss: 31723.589140714983  
iteration: 38 HingeLoss: 56445.94993417217  
iteration: 39 HingeLoss: 31204.81887449517  
iteration: 40 HingeLoss: 47917.10275988659  
iteration: 41 HingeLoss: 36083.01464436707  
iteration: 42 HingeLoss: 31723.589140714983  
iteration: 43 HingeLoss: 56445.94993417217  
iteration: 44 HingeLoss: 31204.81887449517  
iteration: 45 HingeLoss: 47917.10275988659  
iteration: 46 HingeLoss: 36083.01464436707  
iteration: 47 HingeLoss: 31723.589140714983  
iteration: 48 HingeLoss: 56445.94993417217  
iteration: 49 HingeLoss: 31204.81887449517  
iteration: 50 HingeLoss: 47917.10275988659  
iteration: 51 HingeLoss: 36083.01464436707  
iteration: 52 HingeLoss: 31723.589140714983  
iteration: 53 HingeLoss: 56445.94993417217  
iteration: 54 HingeLoss: 31204.81887449517  
iteration: 55 HingeLoss: 47917.10275988659  
iteration: 56 HingeLoss: 36083.01464436707  
iteration: 57 HingeLoss: 31723.589140714983  
iteration: 58 HingeLoss: 56445.94993417217  
iteration: 59 HingeLoss: 31204.81887449517  
iteration: 60 HingeLoss: 47917.10275988659  
iteration: 61 HingeLoss: 36083.01464436707  
iteration: 62 HingeLoss: 31723.589140714983  
iteration: 63 HingeLoss: 56445.94993417217  
iteration: 64 HingeLoss: 31204.81887449517  
iteration: 65 HingeLoss: 47917.10275988659  
iteration: 66 HingeLoss: 36083.01464436707  
iteration: 67 HingeLoss: 31723.589140714983  
iteration: 68 HingeLoss: 56445.94993417217

# Output\_hinge\_train.txt

```

iteration: 69 HingeLoss: 31204.81887449517
iteration: 70 HingeLoss: 47917.10275988659
iteration: 71 HingeLoss: 36083.01464436707
iteration: 72 HingeLoss: 31723.589140714983
iteration: 73 HingeLoss: 56445.94993417217
iteration: 74 HingeLoss: 31204.81887449517
iteration: 75 HingeLoss: 47917.10275988659
iteration: 76 HingeLoss: 36083.01464436707
iteration: 77 HingeLoss: 31723.589140714983
iteration: 78 HingeLoss: 56445.94993417217
iteration: 79 HingeLoss: 31204.81887449517
iteration: 80 HingeLoss: 47917.10275988659
iteration: 81 HingeLoss: 36083.01464436707
iteration: 82 HingeLoss: 31723.589140714983
iteration: 83 HingeLoss: 56445.94993417217
iteration: 84 HingeLoss: 31204.81887449517
iteration: 85 HingeLoss: 47917.10275988659
iteration: 86 HingeLoss: 36083.01464436707
iteration: 87 HingeLoss: 31723.589140714983
iteration: 88 HingeLoss: 56445.94993417217
iteration: 89 HingeLoss: 31204.81887449517
iteration: 90 HingeLoss: 47917.10275988659
iteration: 91 HingeLoss: 36083.01464436707
iteration: 92 HingeLoss: 31723.589140714983
iteration: 93 HingeLoss: 56445.94993417217
iteration: 94 HingeLoss: 31204.81887449517
iteration: 95 HingeLoss: 47917.10275988659
iteration: 96 HingeLoss: 36083.01464436707
iteration: 97 HingeLoss: 31723.589140714983
iteration: 98 HingeLoss: 56445.94993417217
iteration: 99 HingeLoss: 31204.81887449517
[-0.64996287  0.09980621 -0.15564735 ...  0.26878902 -0.2037186
 0.0802795 ]

```

## CROSS VALIDATION 17

```

iteration: 0 HingeLoss: 40983.850921248326
iteration: 1 HingeLoss: 116351.51372040863
iteration: 2 HingeLoss: 33288.65951251635
iteration: 3 HingeLoss: 99516.77197266664
iteration: 4 HingeLoss: 34795.73968146887
iteration: 5 HingeLoss: 16723.24423245988
iteration: 6 HingeLoss: 59804.83897763733
iteration: 7 HingeLoss: 82230.72316771056
iteration: 8 HingeLoss: 29745.34681914116
iteration: 9 HingeLoss: 33899.54594955176
iteration: 10 HingeLoss: 41957.04961938823
iteration: 11 HingeLoss: 43910.4157387568
iteration: 12 HingeLoss: 40798.92845770519
iteration: 13 HingeLoss: 20030.192324035503
iteration: 14 HingeLoss: 52011.82059572342
iteration: 15 HingeLoss: 29895.342136729807
iteration: 16 HingeLoss: 46915.37190177381
iteration: 17 HingeLoss: 49743.15754960707

```

Output\_hinge\_train.txt

iteration: 18 HingeLoss: 39366.1155355176  
iteration: 19 HingeLoss: 48727.490834735436  
iteration: 20 HingeLoss: 16861.68419014549  
iteration: 21 HingeLoss: 59789.59003259823  
iteration: 22 HingeLoss: 82229.07772150397  
iteration: 23 HingeLoss: 29745.169378430903  
iteration: 24 HingeLoss: 33899.55412361046  
iteration: 25 HingeLoss: 41957.049419682364  
iteration: 26 HingeLoss: 43910.415727916006  
iteration: 27 HingeLoss: 40798.9284575026  
iteration: 28 HingeLoss: 20030.192324037707  
iteration: 29 HingeLoss: 52011.820595723424  
iteration: 30 HingeLoss: 29895.342136729792  
iteration: 31 HingeLoss: 46915.37190177381  
iteration: 32 HingeLoss: 49743.15754960707  
iteration: 33 HingeLoss: 39366.1155355176  
iteration: 34 HingeLoss: 48727.490834735436  
iteration: 35 HingeLoss: 16861.68419014549  
iteration: 36 HingeLoss: 59789.59003259823  
iteration: 37 HingeLoss: 82229.07772150397  
iteration: 38 HingeLoss: 29745.169378430903  
iteration: 39 HingeLoss: 33899.55412361046  
iteration: 40 HingeLoss: 41957.049419682364  
iteration: 41 HingeLoss: 43910.415727916006  
iteration: 42 HingeLoss: 40798.9284575026  
iteration: 43 HingeLoss: 20030.192324037707  
iteration: 44 HingeLoss: 52011.820595723424  
iteration: 45 HingeLoss: 29895.342136729792  
iteration: 46 HingeLoss: 46915.37190177381  
iteration: 47 HingeLoss: 49743.15754960707  
iteration: 48 HingeLoss: 39366.1155355176  
iteration: 49 HingeLoss: 48727.490834735436  
iteration: 50 HingeLoss: 16861.68419014549  
iteration: 51 HingeLoss: 59789.59003259823  
iteration: 52 HingeLoss: 82229.07772150397  
iteration: 53 HingeLoss: 29745.169378430903  
iteration: 54 HingeLoss: 33899.55412361046  
iteration: 55 HingeLoss: 41957.049419682364  
iteration: 56 HingeLoss: 43910.415727916006  
iteration: 57 HingeLoss: 40798.9284575026  
iteration: 58 HingeLoss: 20030.192324037707  
iteration: 59 HingeLoss: 52011.820595723424  
iteration: 60 HingeLoss: 29895.342136729792  
iteration: 61 HingeLoss: 46915.37190177381  
iteration: 62 HingeLoss: 49743.15754960707  
iteration: 63 HingeLoss: 39366.1155355176  
iteration: 64 HingeLoss: 48727.490834735436  
iteration: 65 HingeLoss: 16861.68419014549  
iteration: 66 HingeLoss: 59789.59003259823  
iteration: 67 HingeLoss: 82229.07772150397  
iteration: 68 HingeLoss: 29745.169378430903  
iteration: 69 HingeLoss: 33899.55412361046

# Output\_hinge\_train.txt

```
iteration: 70 HingeLoss: 41957.049419682364
iteration: 71 HingeLoss: 43910.415727916006
iteration: 72 HingeLoss: 40798.9284575026
iteration: 73 HingeLoss: 20030.192324037707
iteration: 74 HingeLoss: 52011.820595723424
iteration: 75 HingeLoss: 29895.342136729792
iteration: 76 HingeLoss: 46915.37190177381
iteration: 77 HingeLoss: 49743.15754960707
iteration: 78 HingeLoss: 39366.1155355176
iteration: 79 HingeLoss: 48727.490834735436
iteration: 80 HingeLoss: 16861.68419014549
iteration: 81 HingeLoss: 59789.59003259823
iteration: 82 HingeLoss: 82229.07772150397
iteration: 83 HingeLoss: 29745.169378430903
iteration: 84 HingeLoss: 33899.55412361046
iteration: 85 HingeLoss: 41957.049419682364
iteration: 86 HingeLoss: 43910.415727916006
iteration: 87 HingeLoss: 40798.9284575026
iteration: 88 HingeLoss: 20030.192324037707
iteration: 89 HingeLoss: 52011.820595723424
iteration: 90 HingeLoss: 29895.342136729792
iteration: 91 HingeLoss: 46915.37190177381
iteration: 92 HingeLoss: 49743.15754960707
iteration: 93 HingeLoss: 39366.1155355176
iteration: 94 HingeLoss: 48727.490834735436
iteration: 95 HingeLoss: 16861.68419014549
iteration: 96 HingeLoss: 59789.59003259823
iteration: 97 HingeLoss: 82229.07772150397
iteration: 98 HingeLoss: 29745.169378430903
iteration: 99 HingeLoss: 33899.55412361046
[-0.60591775 0.00518472 -0.18616185 ... 0.29666683 -0.20935551
0.07963135]
```

## CROSS VALIDATION 18

```
iteration: 0 HingeLoss: 30660.29525846798
iteration: 1 HingeLoss: 23444.73126389128
iteration: 2 HingeLoss: 50385.47742579397
iteration: 3 HingeLoss: 26472.86269189988
iteration: 4 HingeLoss: 7608.561725539442
iteration: 5 HingeLoss: 43302.74782669925
iteration: 6 HingeLoss: 27700.685814009958
iteration: 7 HingeLoss: 41502.22560720161
iteration: 8 HingeLoss: 37134.14219210873
iteration: 9 HingeLoss: 30039.294522179138
iteration: 10 HingeLoss: 34445.42288495082
iteration: 11 HingeLoss: 16811.3166178892
iteration: 12 HingeLoss: 46122.879999736426
iteration: 13 HingeLoss: 35592.95084249118
iteration: 14 HingeLoss: 45980.73925807996
iteration: 15 HingeLoss: 38659.45021176882
iteration: 16 HingeLoss: 23442.67979882467
iteration: 17 HingeLoss: 45682.23925580689
iteration: 18 HingeLoss: 26769.89395790048
```

Output\_hinge\_train.txt

iteration: 19 HingeLoss: 42532.58341903477  
iteration: 20 HingeLoss: 44392.48920804539  
iteration: 21 HingeLoss: 52728.50763207549  
iteration: 22 HingeLoss: 192.68160430565487  
iteration: 23 HingeLoss: 52373.24752082443  
iteration: 24 HingeLoss: 19958.955290745755  
iteration: 25 HingeLoss: 41191.64827295782  
iteration: 26 HingeLoss: 22154.373510743033  
iteration: 27 HingeLoss: 40638.52181357345  
iteration: 28 HingeLoss: 22228.02725278744  
iteration: 29 HingeLoss: 40637.742564560045  
iteration: 30 HingeLoss: 22228.131670928866  
iteration: 31 HingeLoss: 40637.741459909535  
iteration: 32 HingeLoss: 22228.131818951613  
iteration: 33 HingeLoss: 40637.74145834358  
iteration: 34 HingeLoss: 22228.131819161455  
iteration: 35 HingeLoss: 40637.74145834136  
iteration: 36 HingeLoss: 22228.131819161747  
iteration: 37 HingeLoss: 40637.74145834135  
iteration: 38 HingeLoss: 22228.13181916175  
iteration: 39 HingeLoss: 40637.74145834135  
iteration: 40 HingeLoss: 22228.13181916175  
iteration: 41 HingeLoss: 40637.74145834135  
iteration: 42 HingeLoss: 22228.13181916175  
iteration: 43 HingeLoss: 40637.74145834135  
iteration: 44 HingeLoss: 22228.13181916175  
iteration: 45 HingeLoss: 40637.74145834135  
iteration: 46 HingeLoss: 22228.13181916175  
iteration: 47 HingeLoss: 40637.74145834135  
iteration: 48 HingeLoss: 22228.13181916175  
iteration: 49 HingeLoss: 40637.74145834135  
iteration: 50 HingeLoss: 22228.13181916175  
iteration: 51 HingeLoss: 40637.74145834135  
iteration: 52 HingeLoss: 22228.13181916175  
iteration: 53 HingeLoss: 40637.74145834135  
iteration: 54 HingeLoss: 22228.13181916175  
iteration: 55 HingeLoss: 40637.74145834135  
iteration: 56 HingeLoss: 22228.13181916175  
iteration: 57 HingeLoss: 40637.74145834135  
iteration: 58 HingeLoss: 22228.13181916175  
iteration: 59 HingeLoss: 40637.74145834135  
iteration: 60 HingeLoss: 22228.13181916175  
iteration: 61 HingeLoss: 40637.74145834135  
iteration: 62 HingeLoss: 22228.13181916175  
iteration: 63 HingeLoss: 40637.74145834135  
iteration: 64 HingeLoss: 22228.13181916175  
iteration: 65 HingeLoss: 40637.74145834135  
iteration: 66 HingeLoss: 22228.13181916175  
iteration: 67 HingeLoss: 40637.74145834135  
iteration: 68 HingeLoss: 22228.13181916175  
iteration: 69 HingeLoss: 40637.74145834135  
iteration: 70 HingeLoss: 22228.13181916175



# Output\_hinge\_train.txt

```

iteration: 71 HingeLoss: 40637.74145834135
iteration: 72 HingeLoss: 22228.13181916175
iteration: 73 HingeLoss: 40637.74145834135
iteration: 74 HingeLoss: 22228.13181916175
iteration: 75 HingeLoss: 40637.74145834135
iteration: 76 HingeLoss: 22228.13181916175
iteration: 77 HingeLoss: 40637.74145834135
iteration: 78 HingeLoss: 22228.13181916175
iteration: 79 HingeLoss: 40637.74145834135
iteration: 80 HingeLoss: 22228.13181916175
iteration: 81 HingeLoss: 40637.74145834135
iteration: 82 HingeLoss: 22228.13181916175
iteration: 83 HingeLoss: 40637.74145834135
iteration: 84 HingeLoss: 22228.13181916175
iteration: 85 HingeLoss: 40637.74145834135
iteration: 86 HingeLoss: 22228.13181916175
iteration: 87 HingeLoss: 40637.74145834135
iteration: 88 HingeLoss: 22228.13181916175
iteration: 89 HingeLoss: 40637.74145834135
iteration: 90 HingeLoss: 22228.13181916175
iteration: 91 HingeLoss: 40637.74145834135
iteration: 92 HingeLoss: 22228.13181916175
iteration: 93 HingeLoss: 40637.74145834135
iteration: 94 HingeLoss: 22228.13181916175
iteration: 95 HingeLoss: 40637.74145834135
iteration: 96 HingeLoss: 22228.13181916175
iteration: 97 HingeLoss: 40637.74145834135
iteration: 98 HingeLoss: 22228.13181916175
iteration: 99 HingeLoss: 40637.74145834135
[-0.18579588 -0.85613967 -0.26746084 ... 0.39247772 -0.46197958
-0.03351256]

```

## CROSS VALIDATION 19

```

iteration: 0 HingeLoss: 43255.97798013014
iteration: 1 HingeLoss: 31029.378182579097
iteration: 2 HingeLoss: 37224.31784576938
iteration: 3 HingeLoss: 37781.93499796864
iteration: 4 HingeLoss: 30230.944903171923
iteration: 5 HingeLoss: 43260.89904673127
iteration: 6 HingeLoss: 44804.95640854609
iteration: 7 HingeLoss: 94683.00538740703
iteration: 8 HingeLoss: 28188.88491208652
iteration: 9 HingeLoss: 32186.550053179322
iteration: 10 HingeLoss: 47105.249017182716
iteration: 11 HingeLoss: 33931.70024555476
iteration: 12 HingeLoss: 52948.28192397217
iteration: 13 HingeLoss: 38461.26274479386
iteration: 14 HingeLoss: 36806.34112930447
iteration: 15 HingeLoss: 30216.23286727663
iteration: 16 HingeLoss: 43259.06935899277
iteration: 17 HingeLoss: 44805.05252596694
iteration: 18 HingeLoss: 94683.00240478796
iteration: 19 HingeLoss: 28188.884763616785

```

Output\_hinge\_train.txt

iteration: 20 HingeLoss: 32186.550053347943  
iteration: 21 HingeLoss: 47105.249017203314  
iteration: 22 HingeLoss: 33931.70024555508  
iteration: 23 HingeLoss: 52948.281923972165  
iteration: 24 HingeLoss: 38461.262744793865  
iteration: 25 HingeLoss: 36806.34112930447  
iteration: 26 HingeLoss: 30216.23286727663  
iteration: 27 HingeLoss: 43259.06935899277  
iteration: 28 HingeLoss: 44805.05252596694  
iteration: 29 HingeLoss: 94683.00240478796  
iteration: 30 HingeLoss: 28188.884763616785  
iteration: 31 HingeLoss: 32186.550053347943  
iteration: 32 HingeLoss: 47105.249017203314  
iteration: 33 HingeLoss: 33931.70024555508  
iteration: 34 HingeLoss: 52948.281923972165  
iteration: 35 HingeLoss: 38461.262744793865  
iteration: 36 HingeLoss: 36806.34112930447  
iteration: 37 HingeLoss: 30216.23286727663  
iteration: 38 HingeLoss: 43259.06935899277  
iteration: 39 HingeLoss: 44805.05252596694  
iteration: 40 HingeLoss: 94683.00240478796  
iteration: 41 HingeLoss: 28188.884763616785  
iteration: 42 HingeLoss: 32186.550053347943  
iteration: 43 HingeLoss: 47105.249017203314  
iteration: 44 HingeLoss: 33931.70024555508  
iteration: 45 HingeLoss: 52948.281923972165  
iteration: 46 HingeLoss: 38461.262744793865  
iteration: 47 HingeLoss: 36806.34112930447  
iteration: 48 HingeLoss: 30216.23286727663  
iteration: 49 HingeLoss: 43259.06935899277  
iteration: 50 HingeLoss: 44805.05252596694  
iteration: 51 HingeLoss: 94683.00240478796  
iteration: 52 HingeLoss: 28188.884763616785  
iteration: 53 HingeLoss: 32186.550053347943  
iteration: 54 HingeLoss: 47105.249017203314  
iteration: 55 HingeLoss: 33931.70024555508  
iteration: 56 HingeLoss: 52948.281923972165  
iteration: 57 HingeLoss: 38461.262744793865  
iteration: 58 HingeLoss: 36806.34112930447  
iteration: 59 HingeLoss: 30216.23286727663  
iteration: 60 HingeLoss: 43259.06935899277  
iteration: 61 HingeLoss: 44805.05252596694  
iteration: 62 HingeLoss: 94683.00240478796  
iteration: 63 HingeLoss: 28188.884763616785  
iteration: 64 HingeLoss: 32186.550053347943  
iteration: 65 HingeLoss: 47105.249017203314  
iteration: 66 HingeLoss: 33931.70024555508  
iteration: 67 HingeLoss: 52948.281923972165  
iteration: 68 HingeLoss: 38461.262744793865  
iteration: 69 HingeLoss: 36806.34112930447  
iteration: 70 HingeLoss: 30216.23286727663  
iteration: 71 HingeLoss: 43259.06935899277

# Output\_hinge\_train.txt

```
iteration: 72 HingeLoss: 44805.05252596694
iteration: 73 HingeLoss: 94683.00240478796
iteration: 74 HingeLoss: 28188.884763616785
iteration: 75 HingeLoss: 32186.550053347943
iteration: 76 HingeLoss: 47105.249017203314
iteration: 77 HingeLoss: 33931.70024555508
iteration: 78 HingeLoss: 52948.281923972165
iteration: 79 HingeLoss: 38461.262744793865
iteration: 80 HingeLoss: 36806.34112930447
iteration: 81 HingeLoss: 30216.23286727663
iteration: 82 HingeLoss: 43259.06935899277
iteration: 83 HingeLoss: 44805.05252596694
iteration: 84 HingeLoss: 94683.00240478796
iteration: 85 HingeLoss: 28188.884763616785
iteration: 86 HingeLoss: 32186.550053347943
iteration: 87 HingeLoss: 47105.249017203314
iteration: 88 HingeLoss: 33931.70024555508
iteration: 89 HingeLoss: 52948.281923972165
iteration: 90 HingeLoss: 38461.262744793865
iteration: 91 HingeLoss: 36806.34112930447
iteration: 92 HingeLoss: 30216.23286727663
iteration: 93 HingeLoss: 43259.06935899277
iteration: 94 HingeLoss: 44805.05252596694
iteration: 95 HingeLoss: 94683.00240478796
iteration: 96 HingeLoss: 28188.884763616785
iteration: 97 HingeLoss: 32186.550053347943
iteration: 98 HingeLoss: 47105.249017203314
iteration: 99 HingeLoss: 33931.70024555508
[-0.08747401 -0.52040011 0.00248436 ... 0.269012 -0.26662311
0.01340332]
```

Accuracy (Hinge Loss): 0.75

eta = 0.1 lambda = 0.1

## CROSS VALIDATION 0

```
iteration: 0 HingeLoss: 32180.657999591735
iteration: 1 HingeLoss: 12454.07373451965
iteration: 2 HingeLoss: 20703.33999155003
iteration: 3 HingeLoss: 18656.235174067468
iteration: 4 HingeLoss: 4124.014095474923
iteration: 5 HingeLoss: 6487.371083667524
iteration: 6 HingeLoss: 950.973753737301
iteration: 7 HingeLoss: 31330.55811836426
iteration: 8 HingeLoss: 4397.042704717554
iteration: 9 HingeLoss: 516.5646787106895
iteration: 10 HingeLoss: 60.686030409754295
iteration: 11 HingeLoss: 7.129396256990761
iteration: 12 HingeLoss: 0.8375616372664247
iteration: 13 HingeLoss: 0.09839676052969369
iteration: 14 HingeLoss: 0.011559653704218196
iteration: 15 HingeLoss: 1.1364901949542456
iteration: 16 HingeLoss: 45302.15726239179
iteration: 17 HingeLoss: 68557.23827695145
iteration: 18 HingeLoss: 5233.943881667721
```

# Output\_hinge\_train.txt

```

iteration: 19 HingeLoss: 8324.843113774576
iteration: 20 HingeLoss: 27670.311406635727
iteration: 21 HingeLoss: 22864.636579512007
iteration: 22 HingeLoss: 3724.8898666605587
iteration: 23 HingeLoss: 34633.35074412311
iteration: 24 HingeLoss: 12089.363081660846
iteration: 25 HingeLoss: 15757.3030181472
iteration: 26 HingeLoss: 24662.611556925553
iteration: 27 HingeLoss: 37030.28579972952
iteration: 28 HingeLoss: 10217.090772104477
iteration: 29 HingeLoss: 61023.47690575426
iteration: 30 HingeLoss: 22523.6973424196
iteration: 31 HingeLoss: 6368.353547971707
iteration: 32 HingeLoss: 6845.2581108954455
iteration: 33 HingeLoss: 26272.88067313511
iteration: 34 HingeLoss: 9735.362549826725
iteration: 35 HingeLoss: 31966.50247913666
iteration: 36 HingeLoss: 26190.610924413693
iteration: 37 HingeLoss: 7227.964526041589
iteration: 38 HingeLoss: 14612.633746816675
iteration: 39 HingeLoss: 11245.67704078008
iteration: 40 HingeLoss: 9344.50430104346
iteration: 41 HingeLoss: 5540.699159687561
iteration: 42 HingeLoss: 26337.664466015915
iteration: 43 HingeLoss: 12012.02357988512
iteration: 44 HingeLoss: 22690.091988157208
iteration: 45 HingeLoss: 46014.376894336194
iteration: 46 HingeLoss: 6357.453287864283
iteration: 47 HingeLoss: 8326.90739769497
iteration: 48 HingeLoss: 11015.005327998717
iteration: 49 HingeLoss: 21789.355338809826
iteration: 50 HingeLoss: 1247.2066111176946
iteration: 51 HingeLoss: 146.52186153812764
iteration: 52 HingeLoss: 17.213391684445078
iteration: 53 HingeLoss: 2.022229653457003
iteration: 54 HingeLoss: 0.2375715864884571
iteration: 55 HingeLoss: 0.027909915478767602
iteration: 56 HingeLoss: 109988.47963068364
iteration: 57 HingeLoss: 30923.258518447903
iteration: 58 HingeLoss: 30981.992975078247
iteration: 59 HingeLoss: 2202.38350717743
iteration: 60 HingeLoss: 258.73606539282173
iteration: 61 HingeLoss: 30.396318950260504
iteration: 62 HingeLoss: 3.570960253736623
iteration: 63 HingeLoss: 0.41951649325147744
iteration: 64 HingeLoss: 0.0492848073360263
iteration: 65 HingeLoss: 0.3674405200409398
iteration: 66 HingeLoss: 47338.517799605
iteration: 67 HingeLoss: 13541.908484172589
iteration: 68 HingeLoss: 7620.463273716848
iteration: 69 HingeLoss: 30542.493002346208
iteration: 70 HingeLoss: 22503.811272587554

```

# Output\_hinge\_train.txt

```

iteration: 71 HingeLoss: 17643.71870777339
iteration: 72 HingeLoss: 13115.849282257557
iteration: 73 HingeLoss: 4099.926397028398
iteration: 74 HingeLoss: 3457.844390015956
iteration: 75 HingeLoss: 36004.7937021265
iteration: 76 HingeLoss: 18414.8584727767
iteration: 77 HingeLoss: 35293.314162504044
iteration: 78 HingeLoss: 6647.633440722237
iteration: 79 HingeLoss: 20648.444367037777
iteration: 80 HingeLoss: 8759.798994284043
iteration: 81 HingeLoss: 31474.179768666338
iteration: 82 HingeLoss: 15605.524974442471
iteration: 83 HingeLoss: 8838.994210105458
iteration: 84 HingeLoss: 10590.146011720366
iteration: 85 HingeLoss: 13064.664341730833
iteration: 86 HingeLoss: 2489.8595804013075
iteration: 87 HingeLoss: 292.5087611282026
iteration: 88 HingeLoss: 34.363936026852336
iteration: 89 HingeLoss: 4.037075999716933
iteration: 90 HingeLoss: 0.4886503946815325
iteration: 91 HingeLoss: 30162.529534908208
iteration: 92 HingeLoss: 16609.11802388672
iteration: 93 HingeLoss: 24722.293026036594
iteration: 94 HingeLoss: 2096.1886795508867
iteration: 95 HingeLoss: 26168.995753219475
iteration: 96 HingeLoss: 22153.18117646112
iteration: 97 HingeLoss: 19486.492617306118
iteration: 98 HingeLoss: 4509.055966826114
iteration: 99 HingeLoss: 489.44490393049387
[-0.20399905 -0.1650743 -0.07973155 ... 0.09212611 0.14710891
-0.0046757 ]

```

## CROSS VALIDATION 1

```

iteration: 0 HingeLoss: 18910.791806238754
iteration: 1 HingeLoss: 15538.866627323032
iteration: 2 HingeLoss: 32341.666183973102
iteration: 3 HingeLoss: 4469.138136778029
iteration: 4 HingeLoss: 26520.319544446782
iteration: 5 HingeLoss: 28756.00948820358
iteration: 6 HingeLoss: 15268.836043038424
iteration: 7 HingeLoss: 14202.694234301202
iteration: 8 HingeLoss: 5700.102796862564
iteration: 9 HingeLoss: 23474.822217676316
iteration: 10 HingeLoss: 44489.9998405875
iteration: 11 HingeLoss: 5879.49401581482
iteration: 12 HingeLoss: 25217.44291452969
iteration: 13 HingeLoss: 3493.205859792669
iteration: 14 HingeLoss: 3083.444291205671
iteration: 15 HingeLoss: 34396.00331133377
iteration: 16 HingeLoss: 17444.772279280405
iteration: 17 HingeLoss: 20165.59004222912
iteration: 18 HingeLoss: 9505.304189868853
iteration: 19 HingeLoss: 30182.5739660704

```

Output\_hinge\_train.txt

```

iteration: 20 HingeLoss: 44016.18076165448
iteration: 21 HingeLoss: 23092.371091397537
iteration: 22 HingeLoss: 11111.860346953381
iteration: 23 HingeLoss: 21847.286548924247
iteration: 24 HingeLoss: 18286.916731420402
iteration: 25 HingeLoss: 22199.289301889454
iteration: 26 HingeLoss: 12155.837594352104
iteration: 27 HingeLoss: 28948.837310872306
iteration: 28 HingeLoss: 15726.208758953719
iteration: 29 HingeLoss: 29318.28428895849
iteration: 30 HingeLoss: 6687.251613465095
iteration: 31 HingeLoss: 1882.9825674795422
iteration: 32 HingeLoss: 221.2128356052388
iteration: 33 HingeLoss: 25.988089046417613
iteration: 34 HingeLoss: 3.0530813026137835
iteration: 35 HingeLoss: 0.3586760620883279
iteration: 36 HingeLoss: 0.6464186911851275
iteration: 37 HingeLoss: 18832.622528424297
iteration: 38 HingeLoss: 15519.840468595768
iteration: 39 HingeLoss: 32328.891971703495
iteration: 40 HingeLoss: 4468.994794506724
iteration: 41 HingeLoss: 26519.45762010977
iteration: 42 HingeLoss: 28755.223006611675
iteration: 43 HingeLoss: 15268.623642515005
iteration: 44 HingeLoss: 14202.562232481467
iteration: 45 HingeLoss: 5700.029420488885
iteration: 46 HingeLoss: 23474.81142899051
iteration: 47 HingeLoss: 44489.99827987668
iteration: 48 HingeLoss: 5879.4940246761
iteration: 49 HingeLoss: 25217.442668621086
iteration: 50 HingeLoss: 3493.2057728085997
iteration: 51 HingeLoss: 3083.4442897715744
iteration: 52 HingeLoss: 34396.00329469943
iteration: 53 HingeLoss: 17444.77227724672
iteration: 54 HingeLoss: 20165.59004006669
iteration: 55 HingeLoss: 9505.304189369961
iteration: 56 HingeLoss: 30182.573965887284
iteration: 57 HingeLoss: 44016.18076158404
iteration: 58 HingeLoss: 23092.371091382378
iteration: 59 HingeLoss: 11111.860346952395
iteration: 60 HingeLoss: 21847.28654892346
iteration: 61 HingeLoss: 18286.916731420148
iteration: 62 HingeLoss: 22199.289301889276
iteration: 63 HingeLoss: 12155.83759435205
iteration: 64 HingeLoss: 28948.83731087229
iteration: 65 HingeLoss: 15726.208758953711
iteration: 66 HingeLoss: 29318.28428895848
iteration: 67 HingeLoss: 6687.251613465092
iteration: 68 HingeLoss: 1882.9825674795422
iteration: 69 HingeLoss: 221.2128356052388
iteration: 70 HingeLoss: 25.988089046417613
iteration: 71 HingeLoss: 3.0530813026137835

```

# Output\_hinge\_train.txt

```

iteration: 72 HingeLoss: 0.3586760620883279
iteration: 73 HingeLoss: 0.6464186911851255
iteration: 74 HingeLoss: 18832.622528424297
iteration: 75 HingeLoss: 15519.840468595768
iteration: 76 HingeLoss: 32328.891971703495
iteration: 77 HingeLoss: 4468.994794506724
iteration: 78 HingeLoss: 26519.45762010977
iteration: 79 HingeLoss: 28755.223006611675
iteration: 80 HingeLoss: 15268.623642515005
iteration: 81 HingeLoss: 14202.562232481467
iteration: 82 HingeLoss: 5700.029420488885
iteration: 83 HingeLoss: 23474.81142899051
iteration: 84 HingeLoss: 44489.99827987668
iteration: 85 HingeLoss: 5879.4940246761
iteration: 86 HingeLoss: 25217.442668621086
iteration: 87 HingeLoss: 3493.2057728085997
iteration: 88 HingeLoss: 3083.4442897715744
iteration: 89 HingeLoss: 34396.00329469943
iteration: 90 HingeLoss: 17444.77227724672
iteration: 91 HingeLoss: 20165.59004006669
iteration: 92 HingeLoss: 9505.304189369961
iteration: 93 HingeLoss: 30182.573965887284
iteration: 94 HingeLoss: 44016.18076158404
iteration: 95 HingeLoss: 23092.371091382378
iteration: 96 HingeLoss: 11111.860346952395
iteration: 97 HingeLoss: 21847.28654892346
iteration: 98 HingeLoss: 18286.916731420148
iteration: 99 HingeLoss: 22199.289301889276
[-0.47476648 -0.05935984 -0.31233754 ... 0.14794864 0.35651959
0.04476747]

```

## CROSS VALIDATION 2

```

iteration: 0 HingeLoss: 40163.71896086112
iteration: 1 HingeLoss: 20617.324892072917
iteration: 2 HingeLoss: 43630.76067951962
iteration: 3 HingeLoss: 4557.667611275492
iteration: 4 HingeLoss: 535.4348964504479
iteration: 5 HingeLoss: 62.90290402653333
iteration: 6 HingeLoss: 7.389834620794921
iteration: 7 HingeLoss: 0.8681579422734462
iteration: 8 HingeLoss: 0.10199121515000675
iteration: 9 HingeLoss: 0.011981930316198808
iteration: 10 HingeLoss: 36653.49792781663
iteration: 11 HingeLoss: 10737.258369051082
iteration: 12 HingeLoss: 1298.5308309352342
iteration: 13 HingeLoss: 152.55143207008518
iteration: 14 HingeLoss: 17.921745770081404
iteration: 15 HingeLoss: 2.2903748197176412
iteration: 16 HingeLoss: 53542.13387067554
iteration: 17 HingeLoss: 4967.432161987564
iteration: 18 HingeLoss: 18428.841263420658
iteration: 19 HingeLoss: 25896.367985599092
iteration: 20 HingeLoss: 13439.775007957816

```

Output\_hinge\_train.txt

```

iteration: 21 HingeLoss: 12960.051110921744
iteration: 22 HingeLoss: 10412.730947467866
iteration: 23 HingeLoss: 19107.66114751295
iteration: 24 HingeLoss: 37992.44589112681
iteration: 25 HingeLoss: 8432.0606233134
iteration: 26 HingeLoss: 990.5986771694843
iteration: 27 HingeLoss: 116.37555551923134
iteration: 28 HingeLoss: 13.671802955671149
iteration: 29 HingeLoss: 1.6061637276378868
iteration: 30 HingeLoss: 0.18869215189424085
iteration: 31 HingeLoss: 0.7454789523883961
iteration: 32 HingeLoss: 36100.591638227954
iteration: 33 HingeLoss: 23911.83873440764
iteration: 34 HingeLoss: 3151.769665242644
iteration: 35 HingeLoss: 15312.347323835014
iteration: 36 HingeLoss: 27120.853331869286
iteration: 37 HingeLoss: 5994.185860001895
iteration: 38 HingeLoss: 15980.275306666066
iteration: 39 HingeLoss: 24752.983535502764
iteration: 40 HingeLoss: 2866.046423046119
iteration: 41 HingeLoss: 22690.07198914948
iteration: 42 HingeLoss: 10938.389401501889
iteration: 43 HingeLoss: 14184.829490425029
iteration: 44 HingeLoss: 23156.663146289477
iteration: 45 HingeLoss: 17042.875755270652
iteration: 46 HingeLoss: 17261.85714462093
iteration: 47 HingeLoss: 1497.089147061436
iteration: 48 HingeLoss: 175.8780676438136
iteration: 49 HingeLoss: 20.66215945712981
iteration: 50 HingeLoss: 2.427390971206613
iteration: 51 HingeLoss: 0.2851699474743031
iteration: 52 HingeLoss: 109339.3517669903
iteration: 53 HingeLoss: 25655.05280262552
iteration: 54 HingeLoss: 29224.523127304175
iteration: 55 HingeLoss: 4952.842854716105
iteration: 56 HingeLoss: 5451.509711885379
iteration: 57 HingeLoss: 11862.073605722413
iteration: 58 HingeLoss: 20948.030660411594
iteration: 59 HingeLoss: 37676.99429336671
iteration: 60 HingeLoss: 3125.0744439477094
iteration: 61 HingeLoss: 46809.02729871418
iteration: 62 HingeLoss: 15475.913263798324
iteration: 63 HingeLoss: 37924.24384261399
iteration: 64 HingeLoss: 21126.6842448193
iteration: 65 HingeLoss: 12929.658107166473
iteration: 66 HingeLoss: 15539.175462279387
iteration: 67 HingeLoss: 14416.84232453072
iteration: 68 HingeLoss: 3585.7346778083106
iteration: 69 HingeLoss: 421.25219293334294
iteration: 70 HingeLoss: 49.48871737482105
iteration: 71 HingeLoss: 5.813935662508118
iteration: 72 HingeLoss: 0.6830212961829857

```



# Output\_hinge\_train.txt

```

iteration: 73 HingeLoss: 0.08024135768269429
iteration: 74 HingeLoss: 50051.31287329764
iteration: 75 HingeLoss: 20252.743572164138
iteration: 76 HingeLoss: 8448.341169407715
iteration: 77 HingeLoss: 47998.17042652913
iteration: 78 HingeLoss: 7244.977321975578
iteration: 79 HingeLoss: 13748.397605630407
iteration: 80 HingeLoss: 48644.39128645459
iteration: 81 HingeLoss: 59439.05051406977
iteration: 82 HingeLoss: 23628.581475285624
iteration: 83 HingeLoss: 8662.881294558872
iteration: 84 HingeLoss: 36812.909652532486
iteration: 85 HingeLoss: 10091.113801408837
iteration: 86 HingeLoss: 33921.59312600943
iteration: 87 HingeLoss: 54895.244649113316
iteration: 88 HingeLoss: 10650.630396744451
iteration: 89 HingeLoss: 35959.21699049896
iteration: 90 HingeLoss: 16650.912567156443
iteration: 91 HingeLoss: 4153.247377416923
iteration: 92 HingeLoss: 15947.106823636663
iteration: 93 HingeLoss: 24192.48595337599
iteration: 94 HingeLoss: 5909.935417785963
iteration: 95 HingeLoss: 22795.768289818345
iteration: 96 HingeLoss: 28614.10914978014
iteration: 97 HingeLoss: 11180.957366588076
iteration: 98 HingeLoss: 9549.576362183656
iteration: 99 HingeLoss: 24418.316440501352
[-0.85093612 -1.38781625 -0.37961376 ... 0.29815505 -0.31011937
0.00423521]

```

## CROSS VALIDATION 3

```

iteration: 0 HingeLoss: 18790.72464206341
iteration: 1 HingeLoss: 17146.164823587544
iteration: 2 HingeLoss: 16678.341229322625
iteration: 3 HingeLoss: 10276.654125006407
iteration: 4 HingeLoss: 5574.489791090631
iteration: 5 HingeLoss: 25954.171204781916
iteration: 6 HingeLoss: 17616.36582172033
iteration: 7 HingeLoss: 23100.938007332046
iteration: 8 HingeLoss: 17817.891189398735
iteration: 9 HingeLoss: 16754.87336586941
iteration: 10 HingeLoss: 21083.558179718213
iteration: 11 HingeLoss: 28784.98821607865
iteration: 12 HingeLoss: 51233.404838404975
iteration: 13 HingeLoss: 6046.277601181175
iteration: 14 HingeLoss: 710.3168325153711
iteration: 15 HingeLoss: 83.44803792272171
iteration: 16 HingeLoss: 9.803477426393822
iteration: 17 HingeLoss: 1.1517127549339816
iteration: 18 HingeLoss: 0.835649075780187
iteration: 19 HingeLoss: 33228.75442493652
iteration: 20 HingeLoss: 5392.201696457012
iteration: 21 HingeLoss: 44432.0345177892

```

Output\_hinge\_train.txt

iteration: 22 HingeLoss: 19468.455412997042  
iteration: 23 HingeLoss: 20074.577687076646  
iteration: 24 HingeLoss: 9579.293532933872  
iteration: 25 HingeLoss: 37042.00133564533  
iteration: 26 HingeLoss: 9122.792766361039  
iteration: 27 HingeLoss: 16003.381743603444  
iteration: 28 HingeLoss: 23152.29399768417  
iteration: 29 HingeLoss: 15115.991009672369  
iteration: 30 HingeLoss: 8008.462680939022  
iteration: 31 HingeLoss: 71506.1306250221  
iteration: 32 HingeLoss: 18710.448158861207  
iteration: 33 HingeLoss: 3210.3402928069754  
iteration: 34 HingeLoss: 377.1508518956586  
iteration: 35 HingeLoss: 44.30769080907941  
iteration: 36 HingeLoss: 5.205268541660637  
iteration: 37 HingeLoss: 0.6115150687394799  
iteration: 38 HingeLoss: 0.0718408044277673  
iteration: 39 HingeLoss: 0.5772957734719893  
iteration: 40 HingeLoss: 45217.406248578416  
iteration: 41 HingeLoss: 68285.61434484746  
iteration: 42 HingeLoss: 5263.167859577842  
iteration: 43 HingeLoss: 8611.465928534259  
iteration: 44 HingeLoss: 23564.57947772218  
iteration: 45 HingeLoss: 19801.11156301341  
iteration: 46 HingeLoss: 11035.335466368771  
iteration: 47 HingeLoss: 9190.419036090352  
iteration: 48 HingeLoss: 20853.164503511438  
iteration: 49 HingeLoss: 8008.605521503427  
iteration: 50 HingeLoss: 41906.477455403656  
iteration: 51 HingeLoss: 14775.539636033973  
iteration: 52 HingeLoss: 1138.5629421105311  
iteration: 53 HingeLoss: 133.7584007888328  
iteration: 54 HingeLoss: 15.713940020233984  
iteration: 55 HingeLoss: 1.8460740372437732  
iteration: 56 HingeLoss: 0.21687682061896874  
iteration: 57 HingeLoss: 38502.85375561561  
iteration: 58 HingeLoss: 19332.14522040286  
iteration: 59 HingeLoss: 3467.1163259709597  
iteration: 60 HingeLoss: 50112.84425253527  
iteration: 61 HingeLoss: 13157.367329349754  
iteration: 62 HingeLoss: 16240.783149595103  
iteration: 63 HingeLoss: 20409.781142698066  
iteration: 64 HingeLoss: 30783.03057278529  
iteration: 65 HingeLoss: 3948.59681393978  
iteration: 66 HingeLoss: 28704.3049261943  
iteration: 67 HingeLoss: 17544.397682850195  
iteration: 68 HingeLoss: 1192.2067198662053  
iteration: 69 HingeLoss: 18599.067868624545  
iteration: 70 HingeLoss: 18133.76114330939  
iteration: 71 HingeLoss: 19527.93440901376  
iteration: 72 HingeLoss: 33236.323756723126  
iteration: 73 HingeLoss: 3464.895138492181

# Output\_hinge\_train.txt

```
iteration: 74 HingeLoss: 1389.8123956830352
iteration: 75 HingeLoss: 48584.611303221114
iteration: 76 HingeLoss: 19132.75345493221
iteration: 77 HingeLoss: 43083.65022539397
iteration: 78 HingeLoss: 5824.571741573031
iteration: 79 HingeLoss: 31297.966121691483
iteration: 80 HingeLoss: 6456.375638412386
iteration: 81 HingeLoss: 25365.530785946205
iteration: 82 HingeLoss: 48586.90036423397
iteration: 83 HingeLoss: 7961.937566785748
iteration: 84 HingeLoss: 8849.868392293785
iteration: 85 HingeLoss: 9480.394391829323
iteration: 86 HingeLoss: 5843.856028522077
iteration: 87 HingeLoss: 6404.078103419971
iteration: 88 HingeLoss: 20204.544225568952
iteration: 89 HingeLoss: 8317.548292875217
iteration: 90 HingeLoss: 37988.854754533204
iteration: 91 HingeLoss: 55236.04373818328
iteration: 92 HingeLoss: 12299.467928987531
iteration: 93 HingeLoss: 14122.628214123597
iteration: 94 HingeLoss: 4333.507719604775
iteration: 95 HingeLoss: 21006.739721042533
iteration: 96 HingeLoss: 47610.258063435074
iteration: 97 HingeLoss: 6216.446987883664
iteration: 98 HingeLoss: 6862.670025770974
iteration: 99 HingeLoss: 25830.575257609096
[-1.0508007 -0.34018476 -0.6972628 ... 0.96430433 -0.27006619
0.15679307]
```

## CROSS VALIDATION 4

```
iteration: 0 HingeLoss: 18790.72464206341
iteration: 1 HingeLoss: 17146.164823587544
iteration: 2 HingeLoss: 35892.56637415478
iteration: 3 HingeLoss: 12223.249918569121
iteration: 4 HingeLoss: 16974.424176934896
iteration: 5 HingeLoss: 25941.89577142058
iteration: 6 HingeLoss: 21083.633271229628
iteration: 7 HingeLoss: 19825.4604444586
iteration: 8 HingeLoss: 12296.536909469327
iteration: 9 HingeLoss: 65056.577245614724
iteration: 10 HingeLoss: 5048.347446180997
iteration: 11 HingeLoss: 593.0799748109177
iteration: 12 HingeLoss: 69.67504916639757
iteration: 13 HingeLoss: 8.185426388553484
iteration: 14 HingeLoss: 0.96162408156205
iteration: 15 HingeLoss: 0.1129716193567128
iteration: 16 HingeLoss: 0.013271908456521401
iteration: 17 HingeLoss: 0.0015591841126230419
iteration: 18 HingeLoss: 69354.83572019536
iteration: 19 HingeLoss: 12812.270737942763
iteration: 20 HingeLoss: 6802.940961020631
iteration: 21 HingeLoss: 12898.178143898262
iteration: 22 HingeLoss: 14086.61333829618
```

Output\_hinge\_train.txt

iteration: 23 HingeLoss: 8108.594697684732  
iteration: 24 HingeLoss: 9580.608969063484  
iteration: 25 HingeLoss: 22824.975869096634  
iteration: 26 HingeLoss: 16371.88335624745  
iteration: 27 HingeLoss: 3278.825123491143  
iteration: 28 HingeLoss: 28218.490896535997  
iteration: 29 HingeLoss: 6667.651792056036  
iteration: 30 HingeLoss: 30009.032612668536  
iteration: 31 HingeLoss: 13807.930683295297  
iteration: 32 HingeLoss: 19803.712773251085  
iteration: 33 HingeLoss: 15652.400756306075  
iteration: 34 HingeLoss: 21632.471307142332  
iteration: 35 HingeLoss: 2976.2530750374867  
iteration: 36 HingeLoss: 349.65028013463376  
iteration: 37 HingeLoss: 41.076923002150295  
iteration: 38 HingeLoss: 4.8257178649331545  
iteration: 39 HingeLoss: 0.5669254464536194  
iteration: 40 HingeLoss: 0.06660241456968967  
iteration: 41 HingeLoss: 0.2839436703329369  
iteration: 42 HingeLoss: 20330.917653713077  
iteration: 43 HingeLoss: 17313.822148174702  
iteration: 44 HingeLoss: 9587.151809645176  
iteration: 45 HingeLoss: 13470.700841093681  
iteration: 46 HingeLoss: 18884.189014153275  
iteration: 47 HingeLoss: 10725.705270114006  
iteration: 48 HingeLoss: 41110.54232752359  
iteration: 49 HingeLoss: 4377.547682771864  
iteration: 50 HingeLoss: 514.2744030813377  
iteration: 51 HingeLoss: 60.41696877581434  
iteration: 52 HingeLoss: 7.097786890008618  
iteration: 53 HingeLoss: 0.8338481681018298  
iteration: 54 HingeLoss: 0.6857441757031338  
iteration: 55 HingeLoss: 31966.123650557533  
iteration: 56 HingeLoss: 22965.15267140616  
iteration: 57 HingeLoss: 22059.307695498886  
iteration: 58 HingeLoss: 14466.035173860559  
iteration: 59 HingeLoss: 16060.62042023411  
iteration: 60 HingeLoss: 4471.407277211661  
iteration: 61 HingeLoss: 16891.93488336225  
iteration: 62 HingeLoss: 15095.57455019185  
iteration: 63 HingeLoss: 16817.558347656428  
iteration: 64 HingeLoss: 38561.384571639814  
iteration: 65 HingeLoss: 17657.733692637663  
iteration: 66 HingeLoss: 51087.76217401381  
iteration: 67 HingeLoss: 4960.491125655177  
iteration: 68 HingeLoss: 22480.245688608018  
iteration: 69 HingeLoss: 14116.866615896417  
iteration: 70 HingeLoss: 1516.9899301283913  
iteration: 71 HingeLoss: 178.21601209908192  
iteration: 72 HingeLoss: 20.93682122584164  
iteration: 73 HingeLoss: 2.459658242151356  
iteration: 74 HingeLoss: 0.28896070721165107

# Output\_hinge\_train.txt

```

iteration: 75 HingeLoss: 0.033947110570623475
iteration: 76 HingeLoss: 0.003988107335472602
iteration: 77 HingeLoss: 45851.0662296474
iteration: 78 HingeLoss: 16481.852678206782
iteration: 79 HingeLoss: 23274.830897249787
iteration: 80 HingeLoss: 18828.92171953943
iteration: 81 HingeLoss: 23933.998427161234
iteration: 82 HingeLoss: 24792.15716942747
iteration: 83 HingeLoss: 11333.411068645415
iteration: 84 HingeLoss: 16206.38947545522
iteration: 85 HingeLoss: 20912.09210262627
iteration: 86 HingeLoss: 20410.70854974782
iteration: 87 HingeLoss: 21522.867119792027
iteration: 88 HingeLoss: 21264.716850236266
iteration: 89 HingeLoss: 38456.04474662375
iteration: 90 HingeLoss: 15491.177018690736
iteration: 91 HingeLoss: 36486.795282136314
iteration: 92 HingeLoss: 33333.03074725499
iteration: 93 HingeLoss: 18863.243525157548
iteration: 94 HingeLoss: 8666.115594303003
iteration: 95 HingeLoss: 15360.467615251204
iteration: 96 HingeLoss: 24798.982755409244
iteration: 97 HingeLoss: 14220.7676213144
iteration: 98 HingeLoss: 46109.896234094
iteration: 99 HingeLoss: 24007.35770230419
[-0.58067816 -0.84570429 0.34604901 ... 0.52709397 0.0443354
0.07414424]

```

## CROSS VALIDATION 5

```

iteration: 0 HingeLoss: 14094.290699987874
iteration: 1 HingeLoss: 1527.8035821398278
iteration: 2 HingeLoss: 179.48640018764516
iteration: 3 HingeLoss: 21.08606644788656
iteration: 4 HingeLoss: 2.477191574291167
iteration: 5 HingeLoss: 0.2910205234772085
iteration: 6 HingeLoss: 103258.25867025
iteration: 7 HingeLoss: 33518.41593301094
iteration: 8 HingeLoss: 2733.3646771727476
iteration: 9 HingeLoss: 321.1157455323339
iteration: 10 HingeLoss: 37.72468521669926
iteration: 11 HingeLoss: 4.431896892317746
iteration: 12 HingeLoss: 0.9075676868041552
iteration: 13 HingeLoss: 14051.15265070677
iteration: 14 HingeLoss: 1530.2074506787683
iteration: 15 HingeLoss: 179.76880671923254
iteration: 16 HingeLoss: 21.11924357375314
iteration: 17 HingeLoss: 2.4810892238057907
iteration: 18 HingeLoss: 0.29147841943238945
iteration: 19 HingeLoss: 103256.21270378203
iteration: 20 HingeLoss: 33517.852595859644
iteration: 21 HingeLoss: 2733.3696031672316
iteration: 22 HingeLoss: 321.11632423827996
iteration: 23 HingeLoss: 37.72475320308717

```

Output\_hinge\_train.txt

iteration: 24 HingeLoss: 4.431904879360174  
iteration: 25 HingeLoss: 0.9075680726738918  
iteration: 26 HingeLoss: 14051.1526118908  
iteration: 27 HingeLoss: 1530.2074528513353  
iteration: 28 HingeLoss: 179.76880697446563  
iteration: 29 HingeLoss: 21.11924360373795  
iteration: 30 HingeLoss: 2.481089227328405  
iteration: 31 HingeLoss: 0.2914784198462264  
iteration: 32 HingeLoss: 103256.21270193844  
iteration: 33 HingeLoss: 33517.85259535203  
iteration: 34 HingeLoss: 2733.3696031716713  
iteration: 35 HingeLoss: 321.11632423880144  
iteration: 36 HingeLoss: 37.724753203148445  
iteration: 37 HingeLoss: 4.431904879367372  
iteration: 38 HingeLoss: 0.9075680726742223  
iteration: 39 HingeLoss: 14051.152611890768  
iteration: 40 HingeLoss: 1530.2074528513376  
iteration: 41 HingeLoss: 179.76880697446592  
iteration: 42 HingeLoss: 21.119243603737974  
iteration: 43 HingeLoss: 2.481089227328408  
iteration: 44 HingeLoss: 0.2914784198462268  
iteration: 45 HingeLoss: 103256.21270193844  
iteration: 46 HingeLoss: 33517.85259535203  
iteration: 47 HingeLoss: 2733.3696031716713  
iteration: 48 HingeLoss: 321.11632423880144  
iteration: 49 HingeLoss: 37.724753203148445  
iteration: 50 HingeLoss: 4.431904879367372  
iteration: 51 HingeLoss: 0.9075680726742223  
iteration: 52 HingeLoss: 14051.152611890768  
iteration: 53 HingeLoss: 1530.2074528513376  
iteration: 54 HingeLoss: 179.76880697446592  
iteration: 55 HingeLoss: 21.119243603737974  
iteration: 56 HingeLoss: 2.481089227328408  
iteration: 57 HingeLoss: 0.2914784198462268  
iteration: 58 HingeLoss: 103256.21270193844  
iteration: 59 HingeLoss: 33517.85259535203  
iteration: 60 HingeLoss: 2733.3696031716713  
iteration: 61 HingeLoss: 321.11632423880144  
iteration: 62 HingeLoss: 37.724753203148445  
iteration: 63 HingeLoss: 4.431904879367372  
iteration: 64 HingeLoss: 0.9075680726742223  
iteration: 65 HingeLoss: 14051.152611890768  
iteration: 66 HingeLoss: 1530.2074528513376  
iteration: 67 HingeLoss: 179.76880697446592  
iteration: 68 HingeLoss: 21.119243603737974  
iteration: 69 HingeLoss: 2.481089227328408  
iteration: 70 HingeLoss: 0.2914784198462268  
iteration: 71 HingeLoss: 103256.21270193844  
iteration: 72 HingeLoss: 33517.85259535203  
iteration: 73 HingeLoss: 2733.3696031716713  
iteration: 74 HingeLoss: 321.11632423880144  
iteration: 75 HingeLoss: 37.724753203148445

# Output\_hinge\_train.txt

```

iteration: 76 HingeLoss: 4.431904879367372
iteration: 77 HingeLoss: 0.9075680726742223
iteration: 78 HingeLoss: 14051.152611890768
iteration: 79 HingeLoss: 1530.2074528513376
iteration: 80 HingeLoss: 179.76880697446592
iteration: 81 HingeLoss: 21.119243603737974
iteration: 82 HingeLoss: 2.481089227328408
iteration: 83 HingeLoss: 0.2914784198462268
iteration: 84 HingeLoss: 103256.21270193844
iteration: 85 HingeLoss: 33517.85259535203
iteration: 86 HingeLoss: 2733.3696031716713
iteration: 87 HingeLoss: 321.11632423880144
iteration: 88 HingeLoss: 37.724753203148445
iteration: 89 HingeLoss: 4.431904879367372
iteration: 90 HingeLoss: 0.9075680726742223
iteration: 91 HingeLoss: 14051.152611890768
iteration: 92 HingeLoss: 1530.2074528513376
iteration: 93 HingeLoss: 179.76880697446592
iteration: 94 HingeLoss: 21.119243603737974
iteration: 95 HingeLoss: 2.481089227328408
iteration: 96 HingeLoss: 0.2914784198462268
iteration: 97 HingeLoss: 103256.21270193844
iteration: 98 HingeLoss: 33517.85259535203
iteration: 99 HingeLoss: 2733.3696031716713
[-0.32953874 -0.2292994 -0.29689339 ... 0.3578335 0.05043813
0.08727569]

```

## CROSS VALIDATION 6

```

iteration: 0 HingeLoss: 32367.651468918404
iteration: 1 HingeLoss: 14516.853179747242
iteration: 2 HingeLoss: 4320.261953337357
iteration: 3 HingeLoss: 37188.87637715205
iteration: 4 HingeLoss: 15263.540137613374
iteration: 5 HingeLoss: 30310.294357039067
iteration: 6 HingeLoss: 2501.479827367377
iteration: 7 HingeLoss: 53673.407701204655
iteration: 8 HingeLoss: 9264.618889515563
iteration: 9 HingeLoss: 5052.884753475926
iteration: 10 HingeLoss: 31411.894442747925
iteration: 11 HingeLoss: 17700.96127127844
iteration: 12 HingeLoss: 15432.403511084427
iteration: 13 HingeLoss: 31521.09348512846
iteration: 14 HingeLoss: 15620.115839409416
iteration: 15 HingeLoss: 17254.96424621924
iteration: 16 HingeLoss: 49418.38547910181
iteration: 17 HingeLoss: 8832.408714104982
iteration: 18 HingeLoss: 19669.259095304493
iteration: 19 HingeLoss: 15534.974945759044
iteration: 20 HingeLoss: 9777.504806397908
iteration: 21 HingeLoss: 17366.670278595855
iteration: 22 HingeLoss: 12764.276286831973
iteration: 23 HingeLoss: 15515.090964361396
iteration: 24 HingeLoss: 7977.044595001964

```

# Output\_hinge\_train.txt

```

iteration: 25 HingeLoss: 17890.496160770082
iteration: 26 HingeLoss: 17157.32764607657
iteration: 27 HingeLoss: 3320.493802688258
iteration: 28 HingeLoss: 17965.630373212778
iteration: 29 HingeLoss: 71201.07790225261
iteration: 30 HingeLoss: 8716.38677405403
iteration: 31 HingeLoss: 15868.627602512197
iteration: 32 HingeLoss: 27821.81551651534
iteration: 33 HingeLoss: 1482.7044016145528
iteration: 34 HingeLoss: 174.18814741580857
iteration: 35 HingeLoss: 20.463627589634072
iteration: 36 HingeLoss: 2.4040674428186026
iteration: 37 HingeLoss: 106805.60021068784
iteration: 38 HingeLoss: 30900.605801015434
iteration: 39 HingeLoss: 30454.506640082214
iteration: 40 HingeLoss: 3344.7775334103653
iteration: 41 HingeLoss: 22510.43941765949
iteration: 42 HingeLoss: 6910.787800650752
iteration: 43 HingeLoss: 14311.902834605302
iteration: 44 HingeLoss: 1696.2160440890002
iteration: 45 HingeLoss: 199.2715001149926
iteration: 46 HingeLoss: 23.410420445236603
iteration: 47 HingeLoss: 2.7502567356922216
iteration: 48 HingeLoss: 0.32310022495813373
iteration: 49 HingeLoss: 0.03795782190556888
iteration: 50 HingeLoss: 57908.77020049335
iteration: 51 HingeLoss: 41658.05517006441
iteration: 52 HingeLoss: 22038.481568293104
iteration: 53 HingeLoss: 25800.76982546466
iteration: 54 HingeLoss: 2917.0287981898005
iteration: 55 HingeLoss: 11588.735359534425
iteration: 56 HingeLoss: 7270.81562309618
iteration: 57 HingeLoss: 36916.25745145365
iteration: 58 HingeLoss: 18554.234520330534
iteration: 59 HingeLoss: 12818.687374222729
iteration: 60 HingeLoss: 12432.14569777776
iteration: 61 HingeLoss: 17423.372335396205
iteration: 62 HingeLoss: 7308.518634819018
iteration: 63 HingeLoss: 20556.611822088635
iteration: 64 HingeLoss: 3727.4965863533143
iteration: 65 HingeLoss: 31777.019951117327
iteration: 66 HingeLoss: 19738.32023475317
iteration: 67 HingeLoss: 34657.47969836256
iteration: 68 HingeLoss: 14845.88634604119
iteration: 69 HingeLoss: 18412.10997672985
iteration: 70 HingeLoss: 48381.80046917502
iteration: 71 HingeLoss: 37059.115759409025
iteration: 72 HingeLoss: 24581.167467525214
iteration: 73 HingeLoss: 5752.810703106906
iteration: 74 HingeLoss: 12326.169004939684
iteration: 75 HingeLoss: 22730.021989749876
iteration: 76 HingeLoss: 19478.993995349596

```



# Output\_hinge\_train.txt

```

iteration: 77 HingeLoss: 2720.1789882891967
iteration: 78 HingeLoss: 28952.559853579864
iteration: 79 HingeLoss: 17751.72189202666
iteration: 80 HingeLoss: 13705.933256799333
iteration: 81 HingeLoss: 23026.46693171484
iteration: 82 HingeLoss: 16845.291446635354
iteration: 83 HingeLoss: 6133.5662073543035
iteration: 84 HingeLoss: 37263.620175389435
iteration: 85 HingeLoss: 27761.923046842665
iteration: 86 HingeLoss: 7858.318688589105
iteration: 87 HingeLoss: 2285.566939129645
iteration: 88 HingeLoss: 18610.403273170275
iteration: 89 HingeLoss: 11363.191280949686
iteration: 90 HingeLoss: 30320.819551146276
iteration: 91 HingeLoss: 27518.262395052272
iteration: 92 HingeLoss: 5247.873639358793
iteration: 93 HingeLoss: 1251.2913517752693
iteration: 94 HingeLoss: 30698.532323213476
iteration: 95 HingeLoss: 15364.013012633925
iteration: 96 HingeLoss: 4145.709150015838
iteration: 97 HingeLoss: 487.0380068877357
iteration: 98 HingeLoss: 57.21723632065987
iteration: 99 HingeLoss: 6.721882247125871
[-0.03364902 -0.01065782 0.00923997 ... -0.00925499 0.01778413
0.00314568]

```

## CROSS VALIDATION 7

```

iteration: 0 HingeLoss: 32367.651468918404
iteration: 1 HingeLoss: 14516.853179747242
iteration: 2 HingeLoss: 4408.543787789008
iteration: 3 HingeLoss: 20285.871074747716
iteration: 4 HingeLoss: 10507.056064120014
iteration: 5 HingeLoss: 18995.04317842276
iteration: 6 HingeLoss: 13798.410180331704
iteration: 7 HingeLoss: 23433.057255272506
iteration: 8 HingeLoss: 14569.831850871471
iteration: 9 HingeLoss: 11423.6429110499
iteration: 10 HingeLoss: 5597.730733633061
iteration: 11 HingeLoss: 11222.009911796458
iteration: 12 HingeLoss: 47656.25084136061
iteration: 13 HingeLoss: 2886.1596716502713
iteration: 14 HingeLoss: 339.06610501967805
iteration: 15 HingeLoss: 39.83349386469643
iteration: 16 HingeLoss: 4.679639781088475
iteration: 17 HingeLoss: 128182.08600322346
iteration: 18 HingeLoss: 33442.475306369015
iteration: 19 HingeLoss: 6918.564289331101
iteration: 20 HingeLoss: 12905.023707403154
iteration: 21 HingeLoss: 11794.105616746552
iteration: 22 HingeLoss: 9007.660958924855
iteration: 23 HingeLoss: 32197.995045034386
iteration: 24 HingeLoss: 2133.4096493477227
iteration: 25 HingeLoss: 24603.33563030682

```

Output\_hinge\_train.txt

iteration: 26 HingeLoss: 18430.100306096032  
iteration: 27 HingeLoss: 4131.648642803832  
iteration: 28 HingeLoss: 4160.730826971598  
iteration: 29 HingeLoss: 47459.81394049505  
iteration: 30 HingeLoss: 19590.939883738076  
iteration: 31 HingeLoss: 7599.549207420461  
iteration: 32 HingeLoss: 37720.99500773112  
iteration: 33 HingeLoss: 6017.331035341262  
iteration: 34 HingeLoss: 28329.07082666456  
iteration: 35 HingeLoss: 7904.129908986493  
iteration: 36 HingeLoss: 16482.17389947912  
iteration: 37 HingeLoss: 16458.114253679494  
iteration: 38 HingeLoss: 22907.808356415313  
iteration: 39 HingeLoss: 47978.38833688987  
iteration: 40 HingeLoss: 2375.5674361846127  
iteration: 41 HingeLoss: 22945.673217135518  
iteration: 42 HingeLoss: 68130.92687357108  
iteration: 43 HingeLoss: 13506.254477034961  
iteration: 44 HingeLoss: 19902.078632464334  
iteration: 45 HingeLoss: 17877.658929997517  
iteration: 46 HingeLoss: 20936.1701676346  
iteration: 47 HingeLoss: 6075.450251894355  
iteration: 48 HingeLoss: 40160.14902318615  
iteration: 49 HingeLoss: 6104.558642772725  
iteration: 50 HingeLoss: 14648.589257645222  
iteration: 51 HingeLoss: 16256.65127643171  
iteration: 52 HingeLoss: 31874.67370020749  
iteration: 53 HingeLoss: 22546.960941599365  
iteration: 54 HingeLoss: 31707.010742915365  
iteration: 55 HingeLoss: 25945.543681759485  
iteration: 56 HingeLoss: 1645.7715263256928  
iteration: 57 HingeLoss: 193.34527700072502  
iteration: 58 HingeLoss: 22.714207616622257  
iteration: 59 HingeLoss: 2.668465636474201  
iteration: 60 HingeLoss: 0.3134914047291145  
iteration: 61 HingeLoss: 0.036828977482687396  
iteration: 62 HingeLoss: 0.0043266691269967265  
iteration: 63 HingeLoss: 104921.98425250931  
iteration: 64 HingeLoss: 16638.794606433483  
iteration: 65 HingeLoss: 12495.826228894093  
iteration: 66 HingeLoss: 18399.19089015324  
iteration: 67 HingeLoss: 15157.737843479996  
iteration: 68 HingeLoss: 18103.02838123058  
iteration: 69 HingeLoss: 27896.065203427665  
iteration: 70 HingeLoss: 9902.71486338897  
iteration: 71 HingeLoss: 3419.176063182482  
iteration: 72 HingeLoss: 401.68488303244567  
iteration: 73 HingeLoss: 47.18994935481862  
iteration: 74 HingeLoss: 5.543876342317997  
iteration: 75 HingeLoss: 0.6512947209970855  
iteration: 76 HingeLoss: 0.07651411889560866  
iteration: 77 HingeLoss: 0.13307873870185805

# Output\_hinge\_train.txt

```

iteration: 78 HingeLoss: 59458.88008671881
iteration: 79 HingeLoss: 38136.56702190799
iteration: 80 HingeLoss: 2269.1712151431957
iteration: 81 HingeLoss: 266.58228687030334
iteration: 82 HingeLoss: 31.318093231019652
iteration: 83 HingeLoss: 3.679250317572767
iteration: 84 HingeLoss: 0.43223841245709754
iteration: 85 HingeLoss: 0.050779378698725064
iteration: 86 HingeLoss: 0.22027473048239546
iteration: 87 HingeLoss: 98593.76433877804
iteration: 88 HingeLoss: 9811.710155079116
iteration: 89 HingeLoss: 3188.663719766955
iteration: 90 HingeLoss: 374.60428759325725
iteration: 91 HingeLoss: 44.00852037589834
iteration: 92 HingeLoss: 5.170121992246845
iteration: 93 HingeLoss: 0.6073860513009537
iteration: 94 HingeLoss: 0.0713557273635316
iteration: 95 HingeLoss: 0.008382872502048614
iteration: 96 HingeLoss: 130942.59711990884
iteration: 97 HingeLoss: 42057.617690689876
iteration: 98 HingeLoss: 9304.642152160024
iteration: 99 HingeLoss: 14471.061083579421
[-0.78531177 -0.04861578 -0.27564718 ... 0.31377824 0.32101907
-0.03229391]

```

## CROSS VALIDATION 8

```

iteration: 0 HingeLoss: 32367.651468918404
iteration: 1 HingeLoss: 14516.853179747242
iteration: 2 HingeLoss: 4408.543787789008
iteration: 3 HingeLoss: 20285.871074747716
iteration: 4 HingeLoss: 10507.056064120014
iteration: 5 HingeLoss: 18995.04317842276
iteration: 6 HingeLoss: 13798.410180331704
iteration: 7 HingeLoss: 23433.057255272506
iteration: 8 HingeLoss: 14569.831850871471
iteration: 9 HingeLoss: 11423.6429110499
iteration: 10 HingeLoss: 5597.730733633061
iteration: 11 HingeLoss: 10855.36757475789
iteration: 12 HingeLoss: 4284.318926345713
iteration: 13 HingeLoss: 17111.267440286058
iteration: 14 HingeLoss: 25885.36166083406
iteration: 15 HingeLoss: 13210.858770955909
iteration: 16 HingeLoss: 29207.089304124485
iteration: 17 HingeLoss: 14059.281185264661
iteration: 18 HingeLoss: 13025.74157289297
iteration: 19 HingeLoss: 22501.552484407886
iteration: 20 HingeLoss: 12938.837359578303
iteration: 21 HingeLoss: 6824.676411744001
iteration: 22 HingeLoss: 23158.651148447418
iteration: 23 HingeLoss: 1948.7747800666893
iteration: 24 HingeLoss: 34570.02971937715
iteration: 25 HingeLoss: 54558.36255864403
iteration: 26 HingeLoss: 5188.505993451023

```

Output\_hinge\_train.txt

iteration: 27 HingeLoss: 23264.854828348034  
iteration: 28 HingeLoss: 14893.277844334218  
iteration: 29 HingeLoss: 11868.39747398934  
iteration: 30 HingeLoss: 15338.188058837764  
iteration: 31 HingeLoss: 44554.22995926646  
iteration: 32 HingeLoss: 56874.22833717086  
iteration: 33 HingeLoss: 6863.509430330484  
iteration: 34 HingeLoss: 16088.489978789843  
iteration: 35 HingeLoss: 8613.131583152623  
iteration: 36 HingeLoss: 3711.5157796512085  
iteration: 37 HingeLoss: 33408.00961163111  
iteration: 38 HingeLoss: 27179.65589087656  
iteration: 39 HingeLoss: 8875.4749616219  
iteration: 40 HingeLoss: 14940.37270564114  
iteration: 41 HingeLoss: 7455.18509656556  
iteration: 42 HingeLoss: 18291.571839016044  
iteration: 43 HingeLoss: 35435.03289788758  
iteration: 44 HingeLoss: 82455.92101174714  
iteration: 45 HingeLoss: 17242.806285633967  
iteration: 46 HingeLoss: 3582.5383911172803  
iteration: 47 HingeLoss: 42818.978848710234  
iteration: 48 HingeLoss: 19957.234573998205  
iteration: 49 HingeLoss: 16178.60584634023  
iteration: 50 HingeLoss: 27585.011754878975  
iteration: 51 HingeLoss: 8287.387718656131  
iteration: 52 HingeLoss: 21683.01846529399  
iteration: 53 HingeLoss: 36526.99919031547  
iteration: 54 HingeLoss: 16299.455659122472  
iteration: 55 HingeLoss: 19062.85359004239  
iteration: 56 HingeLoss: 3140.513590979831  
iteration: 57 HingeLoss: 25077.950245031076  
iteration: 58 HingeLoss: 20074.17901614784  
iteration: 59 HingeLoss: 2802.195246596938  
iteration: 60 HingeLoss: 33578.006732025795  
iteration: 61 HingeLoss: 14928.779671332404  
iteration: 62 HingeLoss: 19348.68420488423  
iteration: 63 HingeLoss: 68657.880981844  
iteration: 64 HingeLoss: 8876.620002346612  
iteration: 65 HingeLoss: 29387.075667593665  
iteration: 66 HingeLoss: 33866.69449725659  
iteration: 67 HingeLoss: 16532.866501062916  
iteration: 68 HingeLoss: 6709.00043067577  
iteration: 69 HingeLoss: 1303.3289001067633  
iteration: 70 HingeLoss: 153.11510934739786  
iteration: 71 HingeLoss: 17.987966589665245  
iteration: 72 HingeLoss: 2.1132267312482047  
iteration: 73 HingeLoss: 0.2482619252933069  
iteration: 74 HingeLoss: 0.029165816728967165  
iteration: 75 HingeLoss: 0.0034264008243016504  
iteration: 76 HingeLoss: 36641.308588548076  
iteration: 77 HingeLoss: 10735.282709277786  
iteration: 78 HingeLoss: 1298.4304274754963

# Output\_hinge\_train.txt

```

iteration: 79 HingeLoss: 152.53963666931165
iteration: 80 HingeLoss: 17.92036004612555
iteration: 81 HingeLoss: 2.2634281809963093
iteration: 82 HingeLoss: 53542.152338275846
iteration: 83 HingeLoss: 4967.431127520819
iteration: 84 HingeLoss: 18428.847834036296
iteration: 85 HingeLoss: 25791.560605639308
iteration: 86 HingeLoss: 13206.302430541642
iteration: 87 HingeLoss: 13122.281697498442
iteration: 88 HingeLoss: 34303.14003969349
iteration: 89 HingeLoss: 28747.732976311498
iteration: 90 HingeLoss: 15193.200449792832
iteration: 91 HingeLoss: 2541.49051124598
iteration: 92 HingeLoss: 298.574364078726
iteration: 93 HingeLoss: 35.076523201855686
iteration: 94 HingeLoss: 4.120790757527684
iteration: 95 HingeLoss: 0.4841105935615427
iteration: 96 HingeLoss: 0.05687332373534979
iteration: 97 HingeLoss: 0.0066814793886445
iteration: 98 HingeLoss: 60725.1990480028
iteration: 99 HingeLoss: 60404.26863517481
[-0.3304257 -1.1393747 -0.10058335 ... 0.51846241 0.43873947
0.19623512]

```

## CROSS VALIDATION 9

```

iteration: 0 HingeLoss: 30700.033620714683
iteration: 1 HingeLoss: 14516.853179747242
iteration: 2 HingeLoss: 4408.543787789008
iteration: 3 HingeLoss: 19055.81850916754
iteration: 4 HingeLoss: 10507.056064120014
iteration: 5 HingeLoss: 18995.04317842276
iteration: 6 HingeLoss: 12021.494563227614
iteration: 7 HingeLoss: 20440.92365728905
iteration: 8 HingeLoss: 9368.63685090881
iteration: 9 HingeLoss: 44318.957493295704
iteration: 10 HingeLoss: 15636.8177704978
iteration: 11 HingeLoss: 1977.2982997317988
iteration: 12 HingeLoss: 18649.77406505308
iteration: 13 HingeLoss: 4300.098773799115
iteration: 14 HingeLoss: 505.17570346282423
iteration: 15 HingeLoss: 59.3480533340608
iteration: 16 HingeLoss: 6.972210679173571
iteration: 17 HingeLoss: 0.8190954719467263
iteration: 18 HingeLoss: 0.09622735500057421
iteration: 19 HingeLoss: 0.011304791892450825
iteration: 20 HingeLoss: 104086.84215028869
iteration: 21 HingeLoss: 13483.28072915076
iteration: 22 HingeLoss: 5614.214132676466
iteration: 23 HingeLoss: 44682.46139699008
iteration: 24 HingeLoss: 20879.822600450258
iteration: 25 HingeLoss: 7645.8168541432715
iteration: 26 HingeLoss: 898.2307409713897
iteration: 27 HingeLoss: 105.52416823701412

```

Output\_hinge\_train.txt

iteration: 28 HingeLoss: 12.396981726623327  
iteration: 29 HingeLoss: 1.456397700146244  
iteration: 30 HingeLoss: 0.17109763551849724  
iteration: 31 HingeLoss: 0.020100554180414426  
iteration: 32 HingeLoss: 68194.23362691615  
iteration: 33 HingeLoss: 12983.863444135568  
iteration: 34 HingeLoss: 6764.526233079725  
iteration: 35 HingeLoss: 12755.69160774928  
iteration: 36 HingeLoss: 14076.709222621921  
iteration: 37 HingeLoss: 5295.759463456222  
iteration: 38 HingeLoss: 13716.803805197549  
iteration: 39 HingeLoss: 25711.421966242753  
iteration: 40 HingeLoss: 16661.4741451164  
iteration: 41 HingeLoss: 3333.454175611185  
iteration: 42 HingeLoss: 28102.875172810345  
iteration: 43 HingeLoss: 6554.835158305801  
iteration: 44 HingeLoss: 29363.686864865183  
iteration: 45 HingeLoss: 33051.81583202732  
iteration: 46 HingeLoss: 9151.169453850182  
iteration: 47 HingeLoss: 17525.879354160625  
iteration: 48 HingeLoss: 30150.67382367215  
iteration: 49 HingeLoss: 6803.083691433059  
iteration: 50 HingeLoss: 31863.276773328675  
iteration: 51 HingeLoss: 41342.97106069977  
iteration: 52 HingeLoss: 18236.7796894313  
iteration: 53 HingeLoss: 5430.686887162401  
iteration: 54 HingeLoss: 10909.055219404516  
iteration: 55 HingeLoss: 10867.721136047383  
iteration: 56 HingeLoss: 17811.74131458523  
iteration: 57 HingeLoss: 37138.13017997327  
iteration: 58 HingeLoss: 8626.653050826924  
iteration: 59 HingeLoss: 1023.8181017238844  
iteration: 60 HingeLoss: 120.27817428467725  
iteration: 61 HingeLoss: 14.130282698553788  
iteration: 62 HingeLoss: 1.6600259384423055  
iteration: 63 HingeLoss: 0.19501988566607356  
iteration: 64 HingeLoss: 103651.54565577657  
iteration: 65 HingeLoss: 13450.018399010758  
iteration: 66 HingeLoss: 5611.897891470946  
iteration: 67 HingeLoss: 44676.879378051366  
iteration: 68 HingeLoss: 20873.052504522253  
iteration: 69 HingeLoss: 7645.843413916874  
iteration: 70 HingeLoss: 898.2338612142075  
iteration: 71 HingeLoss: 105.52453480321249  
iteration: 72 HingeLoss: 12.397024790828802  
iteration: 73 HingeLoss: 1.4564027593301  
iteration: 74 HingeLoss: 0.17109822987153375  
iteration: 75 HingeLoss: 0.020100624005022907  
iteration: 76 HingeLoss: 68194.23176705909  
iteration: 77 HingeLoss: 12983.86338424817  
iteration: 78 HingeLoss: 6764.526120018787  
iteration: 79 HingeLoss: 12755.691587842084

# Output\_hinge\_train.txt

```

iteration: 80 HingeLoss: 14076.709217053505
iteration: 81 HingeLoss: 5295.759462454187
iteration: 82 HingeLoss: 13716.803804509327
iteration: 83 HingeLoss: 25711.42196525083
iteration: 84 HingeLoss: 16661.474145110453
iteration: 85 HingeLoss: 3333.454175553996
iteration: 86 HingeLoss: 28102.87517278175
iteration: 87 HingeLoss: 6554.835158298292
iteration: 88 HingeLoss: 29363.686864862713
iteration: 89 HingeLoss: 33051.815832026026
iteration: 90 HingeLoss: 9151.169453850094
iteration: 91 HingeLoss: 17525.879354160512
iteration: 92 HingeLoss: 30150.673823672114
iteration: 93 HingeLoss: 6803.0836914330575
iteration: 94 HingeLoss: 31863.276773328675
iteration: 95 HingeLoss: 41342.97106069977
iteration: 96 HingeLoss: 18236.779689431296
iteration: 97 HingeLoss: 5430.686887162401
iteration: 98 HingeLoss: 10909.055219404516
iteration: 99 HingeLoss: 10867.721136047381
[-0.17195873 -0.36887995 -0.34328342 ... 0.4050584 -0.01471235
0.11259338]

```

## CROSS VALIDATION 10

```

iteration: 0 HingeLoss: 32706.785688971082
iteration: 1 HingeLoss: 16661.119913576913
iteration: 2 HingeLoss: 4466.471360923213
iteration: 3 HingeLoss: 28199.67311343355
iteration: 4 HingeLoss: 18128.080566137392
iteration: 5 HingeLoss: 9963.268300426389
iteration: 6 HingeLoss: 37931.233645004584
iteration: 7 HingeLoss: 23650.62840814956
iteration: 8 HingeLoss: 3123.358385019539
iteration: 9 HingeLoss: 366.9322153557739
iteration: 10 HingeLoss: 43.107205151884536
iteration: 11 HingeLoss: 5.0642354588706215
iteration: 12 HingeLoss: 0.59494649890939
iteration: 13 HingeLoss: 0.06989432846068293
iteration: 14 HingeLoss: 69005.10577827138
iteration: 15 HingeLoss: 9187.218205079438
iteration: 16 HingeLoss: 5983.220780986348
iteration: 17 HingeLoss: 16380.378113148487
iteration: 18 HingeLoss: 27824.613629297666
iteration: 19 HingeLoss: 31524.538346038433
iteration: 20 HingeLoss: 53414.63896385726
iteration: 21 HingeLoss: 3830.851381589997
iteration: 22 HingeLoss: 6433.547214577923
iteration: 23 HingeLoss: 36786.49729639261
iteration: 24 HingeLoss: 23240.657399261065
iteration: 25 HingeLoss: 9177.675385181792
iteration: 26 HingeLoss: 35961.0447259606
iteration: 27 HingeLoss: 24238.338894473676
iteration: 28 HingeLoss: 6197.659664542121

```

# Output\_hinge\_train.txt

```

iteration: 29 HingeLoss: 15641.490715577818
iteration: 30 HingeLoss: 3639.7596249605085
iteration: 31 HingeLoss: 14367.041959873477
iteration: 32 HingeLoss: 22973.750619803763
iteration: 33 HingeLoss: 9088.78596306729
iteration: 34 HingeLoss: 18558.062671915013
iteration: 35 HingeLoss: 7257.593210305691
iteration: 36 HingeLoss: 33715.92274580076
iteration: 37 HingeLoss: 17518.238071080206
iteration: 38 HingeLoss: 2135.867982405778
iteration: 39 HingeLoss: 250.92182000328353
iteration: 40 HingeLoss: 29.478301221053
iteration: 41 HingeLoss: 3.463111509663697
iteration: 42 HingeLoss: 0.40684642030185414
iteration: 43 HingeLoss: 0.047796326872681864
iteration: 44 HingeLoss: 0.005615113587149927
iteration: 45 HingeLoss: 53571.131982518156
iteration: 46 HingeLoss: 9941.834524208602
iteration: 47 HingeLoss: 843.9445344990532
iteration: 48 HingeLoss: 99.14662344430181
iteration: 49 HingeLoss: 11.647747616780386
iteration: 50 HingeLoss: 1.3683776595824197
iteration: 51 HingeLoss: 0.1607570391160172
iteration: 52 HingeLoss: 0.018885740675739313
iteration: 53 HingeLoss: 98501.0765197595
iteration: 54 HingeLoss: 6431.3368766124695
iteration: 55 HingeLoss: 67027.7436979444
iteration: 56 HingeLoss: 10024.87608231826
iteration: 57 HingeLoss: 4692.349350205624
iteration: 58 HingeLoss: 22183.02379850867
iteration: 59 HingeLoss: 14396.17658084908
iteration: 60 HingeLoss: 24139.37613213594
iteration: 61 HingeLoss: 16772.720272853832
iteration: 62 HingeLoss: 45293.81158625979
iteration: 63 HingeLoss: 6797.971278618386
iteration: 64 HingeLoss: 4907.533335777513
iteration: 65 HingeLoss: 724.2163338854749
iteration: 66 HingeLoss: 85.08095166535675
iteration: 67 HingeLoss: 9.995312170669003
iteration: 68 HingeLoss: 1.1742495051310489
iteration: 69 HingeLoss: 0.4227327832269755
iteration: 70 HingeLoss: 66955.19717202311
iteration: 71 HingeLoss: 17561.843503780146
iteration: 72 HingeLoss: 6592.581009468587
iteration: 73 HingeLoss: 73822.23796600997
iteration: 74 HingeLoss: 16505.06685373364
iteration: 75 HingeLoss: 19189.127738806492
iteration: 76 HingeLoss: 23686.751046465743
iteration: 77 HingeLoss: 34798.24377861627
iteration: 78 HingeLoss: 10501.468164845915
iteration: 79 HingeLoss: 2577.039453710194
iteration: 80 HingeLoss: 16253.60124385991

```



# Output\_hinge\_train.txt

```

iteration: 81 HingeLoss: 37915.59318757611
iteration: 82 HingeLoss: 5853.7746560046035
iteration: 83 HingeLoss: 13681.008394287375
iteration: 84 HingeLoss: 2492.304046548519
iteration: 85 HingeLoss: 36115.68693041271
iteration: 86 HingeLoss: 29129.988325023496
iteration: 87 HingeLoss: 4914.259756076603
iteration: 88 HingeLoss: 6354.973931155201
iteration: 89 HingeLoss: 17139.414094691176
iteration: 90 HingeLoss: 2440.332861534716
iteration: 91 HingeLoss: 286.6903610495619
iteration: 92 HingeLoss: 33.68039025095876
iteration: 93 HingeLoss: 3.9567730261456995
iteration: 94 HingeLoss: 0.46484178668293563
iteration: 95 HingeLoss: 0.0546096238573143
iteration: 96 HingeLoss: 0.39399639211596305
iteration: 97 HingeLoss: 37855.45910103098
iteration: 98 HingeLoss: 8111.498407121486
iteration: 99 HingeLoss: 30586.44294805685
[-0.33659919 0.17055561 -0.13066745 ... 0.37684733 0.07567874
 0.20847399]

```

## CROSS VALIDATION 11

```

iteration: 0 HingeLoss: 30973.90110633553
iteration: 1 HingeLoss: 12990.660832821392
iteration: 2 HingeLoss: 10779.132060448668
iteration: 3 HingeLoss: 11907.333444483333
iteration: 4 HingeLoss: 22047.641721930497
iteration: 5 HingeLoss: 9810.240272413484
iteration: 6 HingeLoss: 11973.447138359299
iteration: 7 HingeLoss: 11667.04995594719
iteration: 8 HingeLoss: 6412.569229191103
iteration: 9 HingeLoss: 32500.34566158639
iteration: 10 HingeLoss: 29242.5240627783
iteration: 11 HingeLoss: 8759.132318398628
iteration: 12 HingeLoss: 15644.222968539234
iteration: 13 HingeLoss: 2837.9279543103094
iteration: 14 HingeLoss: 333.399841750356
iteration: 15 HingeLoss: 39.59336993841638
iteration: 16 HingeLoss: 53320.43198985916
iteration: 17 HingeLoss: 7589.682727884753
iteration: 18 HingeLoss: 2083.6049666266636
iteration: 19 HingeLoss: 244.78195970003378
iteration: 20 HingeLoss: 28.756990290532794
iteration: 21 HingeLoss: 3.3783718848529363
iteration: 22 HingeLoss: 0.3968912072179621
iteration: 23 HingeLoss: 0.0466267882091934
iteration: 24 HingeLoss: 0.031446724491903694
iteration: 25 HingeLoss: 37080.94150456304
iteration: 26 HingeLoss: 11407.061026686286
iteration: 27 HingeLoss: 7595.508302175399
iteration: 28 HingeLoss: 35486.436937800456
iteration: 29 HingeLoss: 24541.892613497206

```

# Output\_hinge\_train.txt

```

iteration: 30 HingeLoss: 5244.831366553631
iteration: 31 HingeLoss: 41071.616755833486
iteration: 32 HingeLoss: 21095.714064423926
iteration: 33 HingeLoss: 18144.436400413222
iteration: 34 HingeLoss: 39949.62990036799
iteration: 35 HingeLoss: 22798.663133688962
iteration: 36 HingeLoss: 1311.6501474772929
iteration: 37 HingeLoss: 27651.794231602486
iteration: 38 HingeLoss: 6170.501720579263
iteration: 39 HingeLoss: 724.9106849371689
iteration: 40 HingeLoss: 85.16252404297904
iteration: 41 HingeLoss: 10.004895295479898
iteration: 42 HingeLoss: 1.1753753308556145
iteration: 43 HingeLoss: 0.13808312107055185
iteration: 44 HingeLoss: 0.016222008259017054
iteration: 45 HingeLoss: 0.8836253535952736
iteration: 46 HingeLoss: 45138.30707861324
iteration: 47 HingeLoss: 60435.94515809631
iteration: 48 HingeLoss: 5294.724205107352
iteration: 49 HingeLoss: 8537.611830044367
iteration: 50 HingeLoss: 23561.261387579947
iteration: 51 HingeLoss: 19253.392325714125
iteration: 52 HingeLoss: 5953.171261688334
iteration: 53 HingeLoss: 7429.05939085833
iteration: 54 HingeLoss: 3112.340193837363
iteration: 55 HingeLoss: 365.6377980006987
iteration: 56 HingeLoss: 42.95513697105364
iteration: 57 HingeLoss: 5.046370485467304
iteration: 58 HingeLoss: 0.5928477214205204
iteration: 59 HingeLoss: 0.0696477640327187
iteration: 60 HingeLoss: 0.008182220930417436
iteration: 61 HingeLoss: 107300.4098407228
iteration: 62 HingeLoss: 26998.874097568034
iteration: 63 HingeLoss: 5903.337224570111
iteration: 64 HingeLoss: 6963.404989057515
iteration: 65 HingeLoss: 36625.098603648235
iteration: 66 HingeLoss: 19370.257383965145
iteration: 67 HingeLoss: 1296.0451359606923
iteration: 68 HingeLoss: 152.25941256694986
iteration: 69 HingeLoss: 17.887439312094877
iteration: 70 HingeLoss: 2.101416784352742
iteration: 71 HingeLoss: 0.24687449245871101
iteration: 72 HingeLoss: 75603.10299513911
iteration: 73 HingeLoss: 11839.428782010295
iteration: 74 HingeLoss: 5423.142417938252
iteration: 75 HingeLoss: 23589.223046463205
iteration: 76 HingeLoss: 10757.386421334824
iteration: 77 HingeLoss: 27844.273999650773
iteration: 78 HingeLoss: 23108.395402573413
iteration: 79 HingeLoss: 4942.01087334148
iteration: 80 HingeLoss: 41704.72118355068
iteration: 81 HingeLoss: 22507.228194790583

```

# Output\_hinge\_train.txt

```

iteration: 82 HingeLoss: 3735.434682453397
iteration: 83 HingeLoss: 36438.95090670888
iteration: 84 HingeLoss: 29771.107587801973
iteration: 85 HingeLoss: 7388.92877754879
iteration: 86 HingeLoss: 9938.881254270555
iteration: 87 HingeLoss: 20574.206206625044
iteration: 88 HingeLoss: 5763.589152073271
iteration: 89 HingeLoss: 3124.2031874173317
iteration: 90 HingeLoss: 18510.771178176677
iteration: 91 HingeLoss: 14437.932706818523
iteration: 92 HingeLoss: 4759.6591597846045
iteration: 93 HingeLoss: 25611.089882464097
iteration: 94 HingeLoss: 31745.281338507826
iteration: 95 HingeLoss: 32167.117897251384
iteration: 96 HingeLoss: 3481.794857839301
iteration: 97 HingeLoss: 46606.62254493588
iteration: 98 HingeLoss: 18467.472373754088
iteration: 99 HingeLoss: 9388.095164299062
[-0.15463852 -0.09598082 0.00191139 ... 0.2186267 -0.29133588
 0.02581324]

```

## CROSS VALIDATION 12

```

iteration: 0 HingeLoss: 32261.85444092323
iteration: 1 HingeLoss: 8409.31928834219
iteration: 2 HingeLoss: 4009.1647525921226
iteration: 3 HingeLoss: 24903.194913725514
iteration: 4 HingeLoss: 3024.006130030386
iteration: 5 HingeLoss: 355.26031014034544
iteration: 6 HingeLoss: 41.73598945705387
iteration: 7 HingeLoss: 4.903145007307955
iteration: 8 HingeLoss: 0.5760215889317025
iteration: 9 HingeLoss: 0.06852485050181936
iteration: 10 HingeLoss: 56524.63091365442
iteration: 11 HingeLoss: 11650.063204098547
iteration: 12 HingeLoss: 6356.541467399275
iteration: 13 HingeLoss: 485.4484982572301
iteration: 14 HingeLoss: 57.03050080996219
iteration: 15 HingeLoss: 6.6999445550075
iteration: 16 HingeLoss: 0.7871096413786592
iteration: 17 HingeLoss: 0.09246965888519171
iteration: 18 HingeLoss: 51667.81714882172
iteration: 19 HingeLoss: 61560.35649812581
iteration: 20 HingeLoss: 16809.179884278692
iteration: 21 HingeLoss: 20964.4809534075
iteration: 22 HingeLoss: 17633.21019183043
iteration: 23 HingeLoss: 22817.426959079945
iteration: 24 HingeLoss: 49931.17618581925
iteration: 25 HingeLoss: 8140.911492772635
iteration: 26 HingeLoss: 3301.7997796703526
iteration: 27 HingeLoss: 24774.49887257216
iteration: 28 HingeLoss: 8599.713346634633
iteration: 29 HingeLoss: 4170.014745812352
iteration: 30 HingeLoss: 14636.829445773907

```

Output\_hinge\_train.txt

iteration: 31 HingeLoss: 13355.866259528815  
iteration: 32 HingeLoss: 32946.58162019697  
iteration: 33 HingeLoss: 14402.695385504332  
iteration: 34 HingeLoss: 14248.690337439666  
iteration: 35 HingeLoss: 34699.35093365814  
iteration: 36 HingeLoss: 25192.912927812315  
iteration: 37 HingeLoss: 10221.158875550096  
iteration: 38 HingeLoss: 14463.394647578782  
iteration: 39 HingeLoss: 13487.107811288948  
iteration: 40 HingeLoss: 8385.073325268178  
iteration: 41 HingeLoss: 35039.814416008965  
iteration: 42 HingeLoss: 14442.46884291032  
iteration: 43 HingeLoss: 24745.237755215705  
iteration: 44 HingeLoss: 16883.826478839757  
iteration: 45 HingeLoss: 21561.663444853788  
iteration: 46 HingeLoss: 37776.33765636276  
iteration: 47 HingeLoss: 21818.681833587343  
iteration: 48 HingeLoss: 4475.448723358035  
iteration: 49 HingeLoss: 525.7758195951186  
iteration: 50 HingeLoss: 61.768155454029866  
iteration: 51 HingeLoss: 7.256524332235802  
iteration: 52 HingeLoss: 0.8524966464883292  
iteration: 53 HingeLoss: 0.10015132575872294  
iteration: 54 HingeLoss: 0.01176578006793034  
iteration: 55 HingeLoss: 0.09538656388444211  
iteration: 56 HingeLoss: 31277.882341527926  
iteration: 57 HingeLoss: 9927.77164554175  
iteration: 58 HingeLoss: 3246.2514864214677  
iteration: 59 HingeLoss: 29814.672112676886  
iteration: 60 HingeLoss: 16572.036024798315  
iteration: 61 HingeLoss: 14084.110824291349  
iteration: 62 HingeLoss: 17088.704546009132  
iteration: 63 HingeLoss: 19498.24677005435  
iteration: 64 HingeLoss: 12201.208499631519  
iteration: 65 HingeLoss: 36747.494032412054  
iteration: 66 HingeLoss: 14643.726382233112  
iteration: 67 HingeLoss: 6743.322586737211  
iteration: 68 HingeLoss: 13975.531132589354  
iteration: 69 HingeLoss: 20497.362284926356  
iteration: 70 HingeLoss: 10853.906488421284  
iteration: 71 HingeLoss: 47531.73354424895  
iteration: 72 HingeLoss: 19499.928982915713  
iteration: 73 HingeLoss: 20294.303537709035  
iteration: 74 HingeLoss: 25402.293661292766  
iteration: 75 HingeLoss: 9404.778299206566  
iteration: 76 HingeLoss: 14998.948424029497  
iteration: 77 HingeLoss: 4143.49900505933  
iteration: 78 HingeLoss: 52223.698136381805  
iteration: 79 HingeLoss: 32508.6380098512  
iteration: 80 HingeLoss: 26317.056648941336  
iteration: 81 HingeLoss: 24069.22284010595  
iteration: 82 HingeLoss: 11611.964942843792

# Output\_hinge\_train.txt

```

iteration: 83 HingeLoss: 1924.5986919994646
iteration: 84 HingeLoss: 54933.866276415516
iteration: 85 HingeLoss: 19786.537969559882
iteration: 86 HingeLoss: 3197.1944678400746
iteration: 87 HingeLoss: 22754.2939569214
iteration: 88 HingeLoss: 26345.339268980515
iteration: 89 HingeLoss: 14687.72584429098
iteration: 90 HingeLoss: 15065.811419100984
iteration: 91 HingeLoss: 15494.87540796099
iteration: 92 HingeLoss: 7379.973343041347
iteration: 93 HingeLoss: 15993.828543186655
iteration: 94 HingeLoss: 7340.655484209203
iteration: 95 HingeLoss: 36982.006019104556
iteration: 96 HingeLoss: 12647.889954576067
iteration: 97 HingeLoss: 16200.125431332119
iteration: 98 HingeLoss: 23563.00251081142
iteration: 99 HingeLoss: 18387.440388402247
[-0.80621707 -0.76449949 0.42648441 ... -0.38894272 0.17819409
0.09969604]

```

## CROSS VALIDATION 13

```

iteration: 0 HingeLoss: 23736.43611252091
iteration: 1 HingeLoss: 24856.22222809947
iteration: 2 HingeLoss: 20370.63158101636
iteration: 3 HingeLoss: 22867.547412845797
iteration: 4 HingeLoss: 21830.19853609988
iteration: 5 HingeLoss: 2002.668595459869
iteration: 6 HingeLoss: 35223.30862552754
iteration: 7 HingeLoss: 32770.72089309642
iteration: 8 HingeLoss: 29981.548521893066
iteration: 9 HingeLoss: 1086.9215322063374
iteration: 10 HingeLoss: 127.69156675815432
iteration: 11 HingeLoss: 15.001208217905527
iteration: 12 HingeLoss: 1.7623422886115199
iteration: 13 HingeLoss: 0.20704001285185353
iteration: 14 HingeLoss: 0.3452583817390116
iteration: 15 HingeLoss: 69250.20099088807
iteration: 16 HingeLoss: 13104.07889727121
iteration: 17 HingeLoss: 6760.413522673456
iteration: 18 HingeLoss: 12728.845007703143
iteration: 19 HingeLoss: 14117.284388486132
iteration: 20 HingeLoss: 8103.108324688592
iteration: 21 HingeLoss: 30576.360166759467
iteration: 22 HingeLoss: 11464.304275605537
iteration: 23 HingeLoss: 13425.190650524873
iteration: 24 HingeLoss: 26500.23408193526
iteration: 25 HingeLoss: 46968.31157614587
iteration: 26 HingeLoss: 27100.496270656815
iteration: 27 HingeLoss: 12528.453488753727
iteration: 28 HingeLoss: 55857.32334207151
iteration: 29 HingeLoss: 1845.6373862284936
iteration: 30 HingeLoss: 216.8255228475885
iteration: 31 HingeLoss: 25.472667442113575

```

Output\_hinge\_train.txt

iteration: 32 HingeLoss: 2.992529560611775  
iteration: 33 HingeLoss: 0.35156244203658704  
iteration: 34 HingeLoss: 46681.42692655122  
iteration: 35 HingeLoss: 13661.800841960314  
iteration: 36 HingeLoss: 7423.760188503505  
iteration: 37 HingeLoss: 28633.988745314797  
iteration: 38 HingeLoss: 27709.65802765837  
iteration: 39 HingeLoss: 8426.252501367955  
iteration: 40 HingeLoss: 26285.74416423831  
iteration: 41 HingeLoss: 19656.403493960697  
iteration: 42 HingeLoss: 22036.078729965193  
iteration: 43 HingeLoss: 1206.2261589574784  
iteration: 44 HingeLoss: 141.70747706993754  
iteration: 45 HingeLoss: 16.647797685703125  
iteration: 46 HingeLoss: 1.9557836573952934  
iteration: 47 HingeLoss: 0.22976550933337206  
iteration: 48 HingeLoss: 0.026992857353932694  
iteration: 49 HingeLoss: 0.565483797397699  
iteration: 50 HingeLoss: 15935.579865049855  
iteration: 51 HingeLoss: 19137.870160399754  
iteration: 52 HingeLoss: 10678.46583998832  
iteration: 53 HingeLoss: 39567.12421587169  
iteration: 54 HingeLoss: 38308.20895729063  
iteration: 55 HingeLoss: 30094.9315451347  
iteration: 56 HingeLoss: 5763.7744465911155  
iteration: 57 HingeLoss: 45165.63786797186  
iteration: 58 HingeLoss: 12665.871575562254  
iteration: 59 HingeLoss: 13151.085999419  
iteration: 60 HingeLoss: 33104.52532459069  
iteration: 61 HingeLoss: 15437.239142082763  
iteration: 62 HingeLoss: 18359.816556233913  
iteration: 63 HingeLoss: 4908.996769273601  
iteration: 64 HingeLoss: 14158.40186863485  
iteration: 65 HingeLoss: 19547.778477092383  
iteration: 66 HingeLoss: 20528.908380451347  
iteration: 67 HingeLoss: 63184.15751991089  
iteration: 68 HingeLoss: 23646.195353825704  
iteration: 69 HingeLoss: 1811.0499585131904  
iteration: 70 HingeLoss: 35762.962169147024  
iteration: 71 HingeLoss: 30161.500251342095  
iteration: 72 HingeLoss: 25714.923711121402  
iteration: 73 HingeLoss: 45116.00228471139  
iteration: 74 HingeLoss: 10907.8004266176  
iteration: 75 HingeLoss: 909.8016208131047  
iteration: 76 HingeLoss: 106.88351546860287  
iteration: 77 HingeLoss: 12.556677870849649  
iteration: 78 HingeLoss: 102298.0701671554  
iteration: 79 HingeLoss: 68082.18117750938  
iteration: 80 HingeLoss: 12149.83364389716  
iteration: 81 HingeLoss: 1562.755836713648  
iteration: 82 HingeLoss: 183.59259186387527  
iteration: 83 HingeLoss: 21.568461941039395

# Output\_hinge\_train.txt

```

iteration: 84 HingeLoss: 2.5338634079908093
iteration: 85 HingeLoss: 0.2976783318117951
iteration: 86 HingeLoss: 0.03497125731039982
iteration: 87 HingeLoss: 0.004108424118163287
iteration: 88 HingeLoss: 0.12656637893998754
iteration: 89 HingeLoss: 63555.19662901115
iteration: 90 HingeLoss: 10102.495826731669
iteration: 91 HingeLoss: 2316.739495542189
iteration: 92 HingeLoss: 10951.947034705809
iteration: 93 HingeLoss: 39334.974633369166
iteration: 94 HingeLoss: 7278.356169467548
iteration: 95 HingeLoss: 44225.22501172717
iteration: 96 HingeLoss: 3820.294865228279
iteration: 97 HingeLoss: 448.8083291798519
iteration: 98 HingeLoss: 52.72601289879076
iteration: 99 HingeLoss: 6.1942532155846015
[-0.03416809 -0.0176723 -0.0156601 ... 0.01165847 0.01036112
0.00293398]

```

## CROSS VALIDATION 14

```

iteration: 0 HingeLoss: 32735.069787314904
iteration: 1 HingeLoss: 11092.795456232943
iteration: 2 HingeLoss: 5188.057917158983
iteration: 3 HingeLoss: 5117.057963346941
iteration: 4 HingeLoss: 25854.91804420287
iteration: 5 HingeLoss: 17141.015384863516
iteration: 6 HingeLoss: 22427.22366163231
iteration: 7 HingeLoss: 15859.872090199686
iteration: 8 HingeLoss: 5568.985485202424
iteration: 9 HingeLoss: 11456.971489168645
iteration: 10 HingeLoss: 25107.84621900414
iteration: 11 HingeLoss: 9360.896605121201
iteration: 12 HingeLoss: 17422.788020307955
iteration: 13 HingeLoss: 42592.62547264506
iteration: 14 HingeLoss: 7599.644454989838
iteration: 15 HingeLoss: 21532.647305312224
iteration: 16 HingeLoss: 27145.25115455895
iteration: 17 HingeLoss: 5887.244769357783
iteration: 18 HingeLoss: 28497.62678265361
iteration: 19 HingeLoss: 4670.567841460626
iteration: 20 HingeLoss: 19830.442236761803
iteration: 21 HingeLoss: 9340.325661668263
iteration: 22 HingeLoss: 25345.443432444077
iteration: 23 HingeLoss: 3805.7206806648755
iteration: 24 HingeLoss: 27320.247876622856
iteration: 25 HingeLoss: 17546.357690522113
iteration: 26 HingeLoss: 29775.514356935746
iteration: 27 HingeLoss: 6108.505341422453
iteration: 28 HingeLoss: 44743.94541578494
iteration: 29 HingeLoss: 14967.786513150251
iteration: 30 HingeLoss: 9469.942972137482
iteration: 31 HingeLoss: 1574.0134542116095
iteration: 32 HingeLoss: 184.9151370280702

```

Output\_hinge\_train.txt

iteration: 33 HingeLoss: 21.72383457753658  
iteration: 34 HingeLoss: 2.552116588922278  
iteration: 35 HingeLoss: 0.6045959521393651  
iteration: 36 HingeLoss: 45727.02771800593  
iteration: 37 HingeLoss: 11242.448037825232  
iteration: 38 HingeLoss: 9654.235105098229  
iteration: 39 HingeLoss: 31118.001975755138  
iteration: 40 HingeLoss: 28376.42683946902  
iteration: 41 HingeLoss: 33328.81137236946  
iteration: 42 HingeLoss: 4722.340589233148  
iteration: 43 HingeLoss: 5406.364450798111  
iteration: 44 HingeLoss: 26197.86935890046  
iteration: 45 HingeLoss: 24726.11561186133  
iteration: 46 HingeLoss: 2154.7134132644296  
iteration: 47 HingeLoss: 253.13578165669662  
iteration: 48 HingeLoss: 29.738397487333515  
iteration: 49 HingeLoss: 3.4936676250457257  
iteration: 50 HingeLoss: 0.4104361534440928  
iteration: 51 HingeLoss: 0.04821804880530903  
iteration: 52 HingeLoss: 0.005664657489554851  
iteration: 53 HingeLoss: 0.9907716247627549  
iteration: 54 HingeLoss: 32184.11430702707  
iteration: 55 HingeLoss: 8402.409867392413  
iteration: 56 HingeLoss: 8322.604496257556  
iteration: 57 HingeLoss: 25602.087586736223  
iteration: 58 HingeLoss: 25709.118476425883  
iteration: 59 HingeLoss: 10519.83054423344  
iteration: 60 HingeLoss: 44359.823449928794  
iteration: 61 HingeLoss: 14515.502970069057  
iteration: 62 HingeLoss: 3603.8588429940737  
iteration: 63 HingeLoss: 35427.1091875817  
iteration: 64 HingeLoss: 7371.443679340602  
iteration: 65 HingeLoss: 1108.9008260786977  
iteration: 66 HingeLoss: 130.27369471094462  
iteration: 67 HingeLoss: 15.304556669557355  
iteration: 68 HingeLoss: 1.7979796717319496  
iteration: 69 HingeLoss: 0.21122669344559508  
iteration: 70 HingeLoss: 0.024814916834394046  
iteration: 71 HingeLoss: 58497.70868753598  
iteration: 72 HingeLoss: 10087.843188851988  
iteration: 73 HingeLoss: 2316.6115399634614  
iteration: 74 HingeLoss: 808.1106418468498  
iteration: 75 HingeLoss: 94.93685690621963  
iteration: 76 HingeLoss: 11.153184146460134  
iteration: 77 HingeLoss: 1.3102763316435464  
iteration: 78 HingeLoss: 0.1539312937651232  
iteration: 79 HingeLoss: 0.018083851953948522  
iteration: 80 HingeLoss: 72213.92922754482  
iteration: 81 HingeLoss: 28574.685346476806  
iteration: 82 HingeLoss: 43671.14134952488  
iteration: 83 HingeLoss: 3874.0915050964527  
iteration: 84 HingeLoss: 455.1283596765773



# Output\_hinge\_train.txt

```

iteration: 85 HingeLoss: 53.46849022781009
iteration: 86 HingeLoss: 6.281479469380897
iteration: 87 HingeLoss: 0.7379483534347356
iteration: 88 HingeLoss: 0.08669418963980312
iteration: 89 HingeLoss: 0.010184835405242022
iteration: 90 HingeLoss: 110022.19604681637
iteration: 91 HingeLoss: 25635.723930728353
iteration: 92 HingeLoss: 30541.56815996711
iteration: 93 HingeLoss: 43175.808704773684
iteration: 94 HingeLoss: 15283.038484276702
iteration: 95 HingeLoss: 18448.3547652438
iteration: 96 HingeLoss: 20017.868645219227
iteration: 97 HingeLoss: 6241.103573195856
iteration: 98 HingeLoss: 733.2049922165002
iteration: 99 HingeLoss: 86.1369394541095
[-0.03385525  0.07679917  0.0347123  ...  0.03612774  0.03497231
 0.03904547]

```

## CROSS VALIDATION 15

```

iteration: 0 HingeLoss: 32735.069787314904
iteration: 1 HingeLoss: 14900.231979730701
iteration: 2 HingeLoss: 10800.133149464564
iteration: 3 HingeLoss: 24657.30074197024
iteration: 4 HingeLoss: 22060.89669673544
iteration: 5 HingeLoss: 17656.91067578931
iteration: 6 HingeLoss: 12064.227896011402
iteration: 7 HingeLoss: 42051.27112659508
iteration: 8 HingeLoss: 11291.724121649175
iteration: 9 HingeLoss: 15335.994091023247
iteration: 10 HingeLoss: 16913.53025823665
iteration: 11 HingeLoss: 4553.094568150775
iteration: 12 HingeLoss: 31348.56996127988
iteration: 13 HingeLoss: 28830.58102826615
iteration: 14 HingeLoss: 44555.19659242951
iteration: 15 HingeLoss: 8883.597810441022
iteration: 16 HingeLoss: 24222.770241408598
iteration: 17 HingeLoss: 21654.981222735907
iteration: 18 HingeLoss: 17426.274132352984
iteration: 19 HingeLoss: 10265.62852272559
iteration: 20 HingeLoss: 3778.989191627923
iteration: 21 HingeLoss: 17814.97832886565
iteration: 22 HingeLoss: 26479.304549391163
iteration: 23 HingeLoss: 14860.417627992001
iteration: 24 HingeLoss: 34408.67192466372
iteration: 25 HingeLoss: 24070.50541627403
iteration: 26 HingeLoss: 21262.288972743645
iteration: 27 HingeLoss: 24564.726676715753
iteration: 28 HingeLoss: 33632.00512205562
iteration: 29 HingeLoss: 2727.847307657307
iteration: 30 HingeLoss: 13467.66306223959
iteration: 31 HingeLoss: 38120.118750615606
iteration: 32 HingeLoss: 4245.114847238327
iteration: 33 HingeLoss: 29452.480708393796

```

Output\_hinge\_train.txt

iteration: 34 HingeLoss: 25984.964132616824  
iteration: 35 HingeLoss: 21080.213157478396  
iteration: 36 HingeLoss: 18473.212389419674  
iteration: 37 HingeLoss: 37740.98154552312  
iteration: 38 HingeLoss: 36489.86714462018  
iteration: 39 HingeLoss: 28786.54144608014  
iteration: 40 HingeLoss: 9084.749402463394  
iteration: 41 HingeLoss: 35795.751509887756  
iteration: 42 HingeLoss: 36825.5312275402  
iteration: 43 HingeLoss: 2652.599322196659  
iteration: 44 HingeLoss: 14240.32845065476  
iteration: 45 HingeLoss: 58008.279893495615  
iteration: 46 HingeLoss: 7703.79509325468  
iteration: 47 HingeLoss: 8565.383940021604  
iteration: 48 HingeLoss: 2223.7351664048074  
iteration: 49 HingeLoss: 25414.402827485683  
iteration: 50 HingeLoss: 27351.181162782843  
iteration: 51 HingeLoss: 8415.34592531703  
iteration: 52 HingeLoss: 9113.062820641886  
iteration: 53 HingeLoss: 13472.93346607091  
iteration: 54 HingeLoss: 27860.59855405087  
iteration: 55 HingeLoss: 14305.889379012831  
iteration: 56 HingeLoss: 8346.203061757064  
iteration: 57 HingeLoss: 12797.969553801138  
iteration: 58 HingeLoss: 22135.06918318748  
iteration: 59 HingeLoss: 9564.71784227795  
iteration: 60 HingeLoss: 25152.578528200494  
iteration: 61 HingeLoss: 28636.617954482877  
iteration: 62 HingeLoss: 23613.928430270797  
iteration: 63 HingeLoss: 42843.36767742289  
iteration: 64 HingeLoss: 23485.924843833855  
iteration: 65 HingeLoss: 19629.516698643525  
iteration: 66 HingeLoss: 52089.77723111225  
iteration: 67 HingeLoss: 6873.641149109629  
iteration: 68 HingeLoss: 5334.2334913735895  
iteration: 69 HingeLoss: 32418.278511818353  
iteration: 70 HingeLoss: 7056.980500702833  
iteration: 71 HingeLoss: 33865.57932874384  
iteration: 72 HingeLoss: 29599.913247178294  
iteration: 73 HingeLoss: 3341.4654773773495  
iteration: 74 HingeLoss: 392.5554416136078  
iteration: 75 HingeLoss: 46.11742236565148  
iteration: 76 HingeLoss: 5.417875846809222  
iteration: 77 HingeLoss: 0.6364921798686929  
iteration: 78 HingeLoss: 58826.89931172326  
iteration: 79 HingeLoss: 17699.806711341553  
iteration: 80 HingeLoss: 18744.519771827323  
iteration: 81 HingeLoss: 15290.648322842284  
iteration: 82 HingeLoss: 24137.19570738226  
iteration: 83 HingeLoss: 15658.651917641855  
iteration: 84 HingeLoss: 5773.639192101763  
iteration: 85 HingeLoss: 35177.99528688682

# Output\_hinge\_train.txt

```

iteration: 86 HingeLoss: 29464.920754857867
iteration: 87 HingeLoss: 11712.609228080531
iteration: 88 HingeLoss: 43330.358210181825
iteration: 89 HingeLoss: 28944.069356410742
iteration: 90 HingeLoss: 19812.761470210007
iteration: 91 HingeLoss: 13620.883456328971
iteration: 92 HingeLoss: 34124.73243060267
iteration: 93 HingeLoss: 3633.61287742883
iteration: 94 HingeLoss: 18830.32970538453
iteration: 95 HingeLoss: 41393.8845246485
iteration: 96 HingeLoss: 23258.54939822708
iteration: 97 HingeLoss: 39977.24395823282
iteration: 98 HingeLoss: 6428.927435744259
iteration: 99 HingeLoss: 3725.5714262192887
[-0.58069875 -0.00232891 -0.38640173 ... 0.20806543 0.08175363
0.11553493]

```

## CROSS VALIDATION 16

```

iteration: 0 HingeLoss: 32735.069787314904
iteration: 1 HingeLoss: 7332.021114177805
iteration: 2 HingeLoss: 22282.9545753849
iteration: 3 HingeLoss: 13026.663417005904
iteration: 4 HingeLoss: 22959.05821845194
iteration: 5 HingeLoss: 15624.691211364085
iteration: 6 HingeLoss: 14257.014138189013
iteration: 7 HingeLoss: 24321.809844356023
iteration: 8 HingeLoss: 14366.432415016534
iteration: 9 HingeLoss: 5119.488242549287
iteration: 10 HingeLoss: 34813.152698295446
iteration: 11 HingeLoss: 7106.159900350238
iteration: 12 HingeLoss: 21478.34787984391
iteration: 13 HingeLoss: 25561.65689543607
iteration: 14 HingeLoss: 2809.5589248117126
iteration: 15 HingeLoss: 18473.365154354906
iteration: 16 HingeLoss: 19030.156338291337
iteration: 17 HingeLoss: 2590.2511764270484
iteration: 18 HingeLoss: 11936.709129906858
iteration: 19 HingeLoss: 38174.82243012047
iteration: 20 HingeLoss: 15415.9385525295
iteration: 21 HingeLoss: 15611.168981764726
iteration: 22 HingeLoss: 46059.235407719
iteration: 23 HingeLoss: 10682.295261950287
iteration: 24 HingeLoss: 16414.006347242743
iteration: 25 HingeLoss: 25701.760045488823
iteration: 26 HingeLoss: 3460.231248830979
iteration: 27 HingeLoss: 11448.718339654562
iteration: 28 HingeLoss: 8775.464788841806
iteration: 29 HingeLoss: 35554.323110434605
iteration: 30 HingeLoss: 14806.53800842217
iteration: 31 HingeLoss: 7629.095129705234
iteration: 32 HingeLoss: 27951.500098641485
iteration: 33 HingeLoss: 22182.681144157345
iteration: 34 HingeLoss: 10499.206936535948

```

Output\_hinge\_train.txt

iteration: 35 HingeLoss: 62356.165680597485  
iteration: 36 HingeLoss: 21016.803582511784  
iteration: 37 HingeLoss: 37180.51978352475  
iteration: 38 HingeLoss: 7493.1234800567  
iteration: 39 HingeLoss: 694.4560717679193  
iteration: 40 HingeLoss: 81.58471538304656  
iteration: 41 HingeLoss: 9.58457425131003  
iteration: 42 HingeLoss: 1.1259960048590765  
iteration: 43 HingeLoss: 0.13228203670969596  
iteration: 44 HingeLoss: 0.038695578590760595  
iteration: 45 HingeLoss: 29317.776260796934  
iteration: 46 HingeLoss: 6685.867169437541  
iteration: 47 HingeLoss: 5502.700028228579  
iteration: 48 HingeLoss: 22929.940074127117  
iteration: 49 HingeLoss: 14786.079328267926  
iteration: 50 HingeLoss: 4557.32957135743  
iteration: 51 HingeLoss: 11667.88461863541  
iteration: 52 HingeLoss: 6256.017482193045  
iteration: 53 HingeLoss: 19942.945044030588  
iteration: 54 HingeLoss: 26845.86662465188  
iteration: 55 HingeLoss: 23414.765955624716  
iteration: 56 HingeLoss: 28348.42443217939  
iteration: 57 HingeLoss: 9959.15051510759  
iteration: 58 HingeLoss: 31548.39211008879  
iteration: 59 HingeLoss: 11668.657756937268  
iteration: 60 HingeLoss: 16469.84607337458  
iteration: 61 HingeLoss: 22143.866637359515  
iteration: 62 HingeLoss: 15455.398472553863  
iteration: 63 HingeLoss: 2156.7648177971178  
iteration: 64 HingeLoss: 253.37678070867224  
iteration: 65 HingeLoss: 29.766710061537044  
iteration: 66 HingeLoss: 95834.7752633803  
iteration: 67 HingeLoss: 33679.11998706443  
iteration: 68 HingeLoss: 3975.795327836453  
iteration: 69 HingeLoss: 9169.980677146377  
iteration: 70 HingeLoss: 58485.79955232385  
iteration: 71 HingeLoss: 32873.759097397604  
iteration: 72 HingeLoss: 4526.91681245814  
iteration: 73 HingeLoss: 43804.035412328325  
iteration: 74 HingeLoss: 18661.865401523843  
iteration: 75 HingeLoss: 20289.48393131585  
iteration: 76 HingeLoss: 10712.3830940072  
iteration: 77 HingeLoss: 40823.284877160404  
iteration: 78 HingeLoss: 17041.52920339211  
iteration: 79 HingeLoss: 11063.631189646316  
iteration: 80 HingeLoss: 31899.59579138713  
iteration: 81 HingeLoss: 11584.909865923028  
iteration: 82 HingeLoss: 16872.77475730945  
iteration: 83 HingeLoss: 25207.58871330719  
iteration: 84 HingeLoss: 10033.334471749215  
iteration: 85 HingeLoss: 6506.953384414664  
iteration: 86 HingeLoss: 10667.631300862713

# Output\_hinge\_train.txt

```

iteration: 87 HingeLoss: 43050.86541809224
iteration: 88 HingeLoss: 5159.855355366887
iteration: 89 HingeLoss: 21215.556492545544
iteration: 90 HingeLoss: 5270.571116742429
iteration: 91 HingeLoss: 80656.30597618758
iteration: 92 HingeLoss: 20719.095059844916
iteration: 93 HingeLoss: 9222.990709483822
iteration: 94 HingeLoss: 37068.86098411704
iteration: 95 HingeLoss: 2010.5177501357664
iteration: 96 HingeLoss: 236.19567181523036
iteration: 97 HingeLoss: 27.74827299111422
iteration: 98 HingeLoss: 3.259867753172563
iteration: 99 HingeLoss: 60589.67347423576
[-1.66421556 -0.57852281 0.04077772 ... 0.91530974 -0.32273402
 0.1151133 ]

```

## CROSS VALIDATION 17

```

iteration: 0 HingeLoss: 32735.069787314904
iteration: 1 HingeLoss: 15057.337575541575
iteration: 2 HingeLoss: 7578.196645977816
iteration: 3 HingeLoss: 24698.34590885919
iteration: 4 HingeLoss: 22066.02788743937
iteration: 5 HingeLoss: 17661.306286116956
iteration: 6 HingeLoss: 9090.683530420562
iteration: 7 HingeLoss: 16167.430341614207
iteration: 8 HingeLoss: 29502.17513973686
iteration: 9 HingeLoss: 5030.032290176694
iteration: 10 HingeLoss: 590.9283098596655
iteration: 11 HingeLoss: 69.42227151812868
iteration: 12 HingeLoss: 8.155730064584835
iteration: 13 HingeLoss: 0.958135356734953
iteration: 14 HingeLoss: 0.11256176388328608
iteration: 15 HingeLoss: 0.07756228852537415
iteration: 16 HingeLoss: 44952.9402473087
iteration: 17 HingeLoss: 22834.942048104916
iteration: 18 HingeLoss: 11315.262667991086
iteration: 19 HingeLoss: 2855.297935133522
iteration: 20 HingeLoss: 335.4404674994593
iteration: 21 HingeLoss: 39.40755388491324
iteration: 22 HingeLoss: 4.629600342406045
iteration: 23 HingeLoss: 0.5438855553683993
iteration: 24 HingeLoss: 0.06389568763178732
iteration: 25 HingeLoss: 0.00750646686171609
iteration: 26 HingeLoss: 59492.462847569965
iteration: 27 HingeLoss: 26335.26352728522
iteration: 28 HingeLoss: 26291.84894108438
iteration: 29 HingeLoss: 9527.328856354368
iteration: 30 HingeLoss: 21218.257498452047
iteration: 31 HingeLoss: 7317.331450388103
iteration: 32 HingeLoss: 19798.879505243814
iteration: 33 HingeLoss: 8659.88064881887
iteration: 34 HingeLoss: 6765.1622592512185
iteration: 35 HingeLoss: 10203.572605415902

```

# Output\_hinge\_train.txt

```

iteration: 36 HingeLoss: 26235.575288794833
iteration: 37 HingeLoss: 10400.9255770383
iteration: 38 HingeLoss: 23214.291776323116
iteration: 39 HingeLoss: 11416.988751722196
iteration: 40 HingeLoss: 7627.470270038682
iteration: 41 HingeLoss: 74651.33600157918
iteration: 42 HingeLoss: 11026.840254172022
iteration: 43 HingeLoss: 7911.405943850298
iteration: 44 HingeLoss: 36002.644216290064
iteration: 45 HingeLoss: 26412.173535574504
iteration: 46 HingeLoss: 18063.606815480365
iteration: 47 HingeLoss: 19396.658175909193
iteration: 48 HingeLoss: 5189.21474346161
iteration: 49 HingeLoss: 38789.730820563644
iteration: 50 HingeLoss: 31024.429341815172
iteration: 51 HingeLoss: 13837.492394433768
iteration: 52 HingeLoss: 5370.526294530449
iteration: 53 HingeLoss: 1448.2993244341687
iteration: 54 HingeLoss: 47669.93430741064
iteration: 55 HingeLoss: 20822.212763059517
iteration: 56 HingeLoss: 4997.3095624636435
iteration: 57 HingeLoss: 19315.311905563918
iteration: 58 HingeLoss: 3588.814676944573
iteration: 59 HingeLoss: 5182.40811863146
iteration: 60 HingeLoss: 21398.36951954214
iteration: 61 HingeLoss: 15416.833491960107
iteration: 62 HingeLoss: 60056.804381788534
iteration: 63 HingeLoss: 6068.58499318585
iteration: 64 HingeLoss: 12924.00313964982
iteration: 65 HingeLoss: 37252.91359334448
iteration: 66 HingeLoss: 3081.3549805240073
iteration: 67 HingeLoss: 20530.1495686735
iteration: 68 HingeLoss: 22579.020932955482
iteration: 69 HingeLoss: 10125.397947530982
iteration: 70 HingeLoss: 36838.56870642098
iteration: 71 HingeLoss: 22999.288071488907
iteration: 72 HingeLoss: 55434.43496419457
iteration: 73 HingeLoss: 3938.9868912414777
iteration: 74 HingeLoss: 12666.286879713
iteration: 75 HingeLoss: 12835.863616504128
iteration: 76 HingeLoss: 38106.472691177034
iteration: 77 HingeLoss: 22491.763033558982
iteration: 78 HingeLoss: 4538.420180451295
iteration: 79 HingeLoss: 533.173707831779
iteration: 80 HingeLoss: 62.63725953528154
iteration: 81 HingeLoss: 7.358626699814869
iteration: 82 HingeLoss: 0.8644916349944666
iteration: 83 HingeLoss: 0.10156049728602319
iteration: 84 HingeLoss: 0.011931329571569942
iteration: 85 HingeLoss: 0.001401692874194015
iteration: 86 HingeLoss: 47375.449382974366
iteration: 87 HingeLoss: 17904.200266444775

```

# Output\_hinge\_train.txt

```

iteration: 88 HingeLoss: 6511.918056206739
iteration: 89 HingeLoss: 40850.738519047285
iteration: 90 HingeLoss: 18466.532650262063
iteration: 91 HingeLoss: 7692.838524964758
iteration: 92 HingeLoss: 27498.056758063325
iteration: 93 HingeLoss: 30427.81615403186
iteration: 94 HingeLoss: 5078.328894547925
iteration: 95 HingeLoss: 596.6021960589233
iteration: 96 HingeLoss: 70.08883980012781
iteration: 97 HingeLoss: 8.234038521780443
iteration: 98 HingeLoss: 0.9673350360985804
iteration: 99 HingeLoss: 0.11364254242783259
[-0.00562703 0.00025368 -0.0031997 ... 0.00485656 0.00191977
 0.0002596 ]

```

## CROSS VALIDATION 18

```

iteration: 0 HingeLoss: 28019.41503058104
iteration: 1 HingeLoss: 13617.37550238517
iteration: 2 HingeLoss: 884.2423330639155
iteration: 3 HingeLoss: 103.88080975231115
iteration: 4 HingeLoss: 12.203919933808287
iteration: 5 HingeLoss: 1.4337167962583168
iteration: 6 HingeLoss: 0.16843308240484098
iteration: 7 HingeLoss: 0.01978752241895651
iteration: 8 HingeLoss: 0.22475947089839907
iteration: 9 HingeLoss: 18949.298570522904
iteration: 10 HingeLoss: 25726.661050284303
iteration: 11 HingeLoss: 5815.260158766183
iteration: 12 HingeLoss: 3143.852994925491
iteration: 13 HingeLoss: 40899.703131765265
iteration: 14 HingeLoss: 16729.448594709356
iteration: 15 HingeLoss: 15740.736235337252
iteration: 16 HingeLoss: 12378.469090782044
iteration: 17 HingeLoss: 13455.063497156756
iteration: 18 HingeLoss: 41476.41393661867
iteration: 19 HingeLoss: 8180.398451664562
iteration: 20 HingeLoss: 5456.029627196692
iteration: 21 HingeLoss: 5159.711037975735
iteration: 22 HingeLoss: 29126.405439828886
iteration: 23 HingeLoss: 34428.70078488324
iteration: 24 HingeLoss: 14859.166331455464
iteration: 25 HingeLoss: 7105.026060648833
iteration: 26 HingeLoss: 25025.871906966553
iteration: 27 HingeLoss: 45264.67653905798
iteration: 28 HingeLoss: 14158.498037449805
iteration: 29 HingeLoss: 12451.742533833814
iteration: 30 HingeLoss: 5755.051084051805
iteration: 31 HingeLoss: 45893.341397181925
iteration: 32 HingeLoss: 19726.55535260348
iteration: 33 HingeLoss: 2090.6206514687456
iteration: 34 HingeLoss: 28413.389820539458
iteration: 35 HingeLoss: 30468.569644954292
iteration: 36 HingeLoss: 23993.95347854823

```

Output\_hinge\_train.txt

iteration: 37 HingeLoss: 2675.030891743078  
iteration: 38 HingeLoss: 314.2626910700414  
iteration: 39 HingeLoss: 36.91958821986932  
iteration: 40 HingeLoss: 4.337314078497861  
iteration: 41 HingeLoss: 0.5095477583201042  
iteration: 42 HingeLoss: 0.05986168243987622  
iteration: 43 HingeLoss: 0.13216909857164102  
iteration: 44 HingeLoss: 78511.6470186968  
iteration: 45 HingeLoss: 11223.674973662355  
iteration: 46 HingeLoss: 6084.091960040383  
iteration: 47 HingeLoss: 27480.687898926575  
iteration: 48 HingeLoss: 30647.30636673692  
iteration: 49 HingeLoss: 2746.6741712139506  
iteration: 50 HingeLoss: 322.6793452003154  
iteration: 51 HingeLoss: 37.908376941879986  
iteration: 52 HingeLoss: 4.453477000443145  
iteration: 53 HingeLoss: 0.5231945810785872  
iteration: 54 HingeLoss: 0.0614649114933703  
iteration: 55 HingeLoss: 0.007220899224719563  
iteration: 56 HingeLoss: 48026.813350253025  
iteration: 57 HingeLoss: 17449.994545231453  
iteration: 58 HingeLoss: 2181.681875076978  
iteration: 59 HingeLoss: 20996.328504245088  
iteration: 60 HingeLoss: 15085.299342620063  
iteration: 61 HingeLoss: 13996.240729553378  
iteration: 62 HingeLoss: 8139.132296838141  
iteration: 63 HingeLoss: 43299.88784758838  
iteration: 64 HingeLoss: 4345.508630323301  
iteration: 65 HingeLoss: 19138.305203512376  
iteration: 66 HingeLoss: 40280.20490411245  
iteration: 67 HingeLoss: 10528.337225502848  
iteration: 68 HingeLoss: 42467.91012529939  
iteration: 69 HingeLoss: 26140.97744272164  
iteration: 70 HingeLoss: 33601.679688890836  
iteration: 71 HingeLoss: 15450.080798211155  
iteration: 72 HingeLoss: 18902.640730442876  
iteration: 73 HingeLoss: 11514.074710220506  
iteration: 74 HingeLoss: 15127.33016259269  
iteration: 75 HingeLoss: 4472.797788240211  
iteration: 76 HingeLoss: 943.3573395672397  
iteration: 77 HingeLoss: 50404.48977312617  
iteration: 78 HingeLoss: 59640.609955110995  
iteration: 79 HingeLoss: 43850.52684207135  
iteration: 80 HingeLoss: 2612.9098153584428  
iteration: 81 HingeLoss: 15380.401890137477  
iteration: 82 HingeLoss: 38320.21028036126  
iteration: 83 HingeLoss: 19241.088982753645  
iteration: 84 HingeLoss: 16425.714288018928  
iteration: 85 HingeLoss: 16202.38796175755  
iteration: 86 HingeLoss: 35099.19305737086  
iteration: 87 HingeLoss: 3507.7625685043263  
iteration: 88 HingeLoss: 412.0920277278075



# Output\_hinge\_train.txt

```

iteration: 89 HingeLoss: 48.412580954481626
iteration: 90 HingeLoss: 5.687511130941688
iteration: 91 HingeLoss: 0.668168939288727
iteration: 92 HingeLoss: 0.07849650245102963
iteration: 93 HingeLoss: 0.009221770924586372
iteration: 94 HingeLoss: 94084.34192799305
iteration: 95 HingeLoss: 35011.3901328782
iteration: 96 HingeLoss: 11724.765031083922
iteration: 97 HingeLoss: 6964.498970205566
iteration: 98 HingeLoss: 20295.567567951646
iteration: 99 HingeLoss: 7188.386746858287
[-0.3887692 -0.2443487 -0.28528225 ... 0.78607815 0.01091601
-0.01946124]

```

## CROSS VALIDATION 19

```

iteration: 0 HingeLoss: 32051.521784759003
iteration: 1 HingeLoss: 7677.021126600263
iteration: 2 HingeLoss: 10832.558696446069
iteration: 3 HingeLoss: 58095.24431680141
iteration: 4 HingeLoss: 14918.087926232383
iteration: 5 HingeLoss: 26171.981665498453
iteration: 6 HingeLoss: 2737.6713416936855
iteration: 7 HingeLoss: 321.6216925799226
iteration: 8 HingeLoss: 37.78412388755907
iteration: 9 HingeLoss: 4.438879748745942
iteration: 10 HingeLoss: 0.5214796956113763
iteration: 11 HingeLoss: 0.061263446708994945
iteration: 12 HingeLoss: 0.007197231137188655
iteration: 13 HingeLoss: 50328.1656999163
iteration: 14 HingeLoss: 33326.49730987246
iteration: 15 HingeLoss: 9433.386833091718
iteration: 16 HingeLoss: 28023.54234743941
iteration: 17 HingeLoss: 18783.06126413148
iteration: 18 HingeLoss: 20803.54793523018
iteration: 19 HingeLoss: 16330.872160019104
iteration: 20 HingeLoss: 18709.847881072514
iteration: 21 HingeLoss: 15401.652326873542
iteration: 22 HingeLoss: 29752.264868090202
iteration: 23 HingeLoss: 13925.784529465838
iteration: 24 HingeLoss: 3911.7793073029015
iteration: 25 HingeLoss: 19105.373046236542
iteration: 26 HingeLoss: 23047.01629715976
iteration: 27 HingeLoss: 5539.427072973152
iteration: 28 HingeLoss: 46798.54150464886
iteration: 29 HingeLoss: 13727.96610149093
iteration: 30 HingeLoss: 338.58153493388596
iteration: 31 HingeLoss: 39.77656655980321
iteration: 32 HingeLoss: 4.6729519599921545
iteration: 33 HingeLoss: 0.5489785044056993
iteration: 34 HingeLoss: 0.0644940074025551
iteration: 35 HingeLoss: 0.007576757482232757
iteration: 36 HingeLoss: 67383.06023800829
iteration: 37 HingeLoss: 13538.630776929005

```

Output\_hinge\_train.txt

iteration: 38 HingeLoss: 13465.206755103985  
iteration: 39 HingeLoss: 23607.550514351413  
iteration: 40 HingeLoss: 17637.816964903745  
iteration: 41 HingeLoss: 27660.341239756614  
iteration: 42 HingeLoss: 18210.21506687304  
iteration: 43 HingeLoss: 24899.337250539997  
iteration: 44 HingeLoss: 6471.246072717904  
iteration: 45 HingeLoss: 29775.592207512884  
iteration: 46 HingeLoss: 54654.699501349656  
iteration: 47 HingeLoss: 13776.417548654485  
iteration: 48 HingeLoss: 26044.783950485828  
iteration: 49 HingeLoss: 3468.1401331464313  
iteration: 50 HingeLoss: 407.4371831049822  
iteration: 51 HingeLoss: 47.86572970046535  
iteration: 52 HingeLoss: 5.623267032964117  
iteration: 53 HingeLoss: 0.6606215411715253  
iteration: 54 HingeLoss: 0.3409273634278524  
iteration: 55 HingeLoss: 44782.83397260311  
iteration: 56 HingeLoss: 51301.37783035464  
iteration: 57 HingeLoss: 5130.371305439047  
iteration: 58 HingeLoss: 34489.431987425865  
iteration: 59 HingeLoss: 22103.22419079357  
iteration: 60 HingeLoss: 8307.61221701738  
iteration: 61 HingeLoss: 5903.5808864916235  
iteration: 62 HingeLoss: 10760.550943800143  
iteration: 63 HingeLoss: 25970.289920711668  
iteration: 64 HingeLoss: 6096.065271400819  
iteration: 65 HingeLoss: 40556.02099177722  
iteration: 66 HingeLoss: 25491.909710575634  
iteration: 67 HingeLoss: 8987.612311023819  
iteration: 68 HingeLoss: 39347.60418479763  
iteration: 69 HingeLoss: 18909.988198854197  
iteration: 70 HingeLoss: 26093.907976253722  
iteration: 71 HingeLoss: 3222.5561082332497  
iteration: 72 HingeLoss: 54211.1972207092  
iteration: 73 HingeLoss: 4225.538023042772  
iteration: 74 HingeLoss: 18763.904150106042  
iteration: 75 HingeLoss: 19077.843085724602  
iteration: 76 HingeLoss: 8309.241483234719  
iteration: 77 HingeLoss: 4184.279478503119  
iteration: 78 HingeLoss: 48405.83971098361  
iteration: 79 HingeLoss: 19360.48460763047  
iteration: 80 HingeLoss: 15979.3356084766  
iteration: 81 HingeLoss: 8997.275726112894  
iteration: 82 HingeLoss: 42322.978232054724  
iteration: 83 HingeLoss: 4544.223296560277  
iteration: 84 HingeLoss: 25256.95172359689  
iteration: 85 HingeLoss: 23023.77054209542  
iteration: 86 HingeLoss: 9028.649033978687  
iteration: 87 HingeLoss: 16493.915663228778  
iteration: 88 HingeLoss: 12500.8135181962  
iteration: 89 HingeLoss: 7028.8133054658465

# Output\_hinge\_train.txt

```

iteration: 90 HingeLoss: 29984.15968974067
iteration: 91 HingeLoss: 22231.445134313966
iteration: 92 HingeLoss: 4886.430946572976
iteration: 93 HingeLoss: 34145.77570970163
iteration: 94 HingeLoss: 2951.0386487202713
iteration: 95 HingeLoss: 16386.44829421224
iteration: 96 HingeLoss: 34309.726364296555
iteration: 97 HingeLoss: 619.9439491678347
iteration: 98 HingeLoss: 72.8310294955594
iteration: 99 HingeLoss: 8.556191030662069
[-0.0343012 -0.0216817 0.00803494 ... -0.0194802 0.00070884
-0.0021146 ]

```

Accuracy (Hinge Loss): 0.9

eta = 0.01 lambda = 1

CROSS VALIDATION 0

```

iteration: 0 HingeLoss: 3219.8657999591737
iteration: 1 HingeLoss: 1248.1073734519648
iteration: 2 HingeLoss: 2075.733999155003
iteration: 3 HingeLoss: 1869.2235174067464
iteration: 4 HingeLoss: 415.10140954749227
iteration: 5 HingeLoss: 649.637108366752
iteration: 6 HingeLoss: 95.99737537373011
iteration: 7 HingeLoss: 3142.9558118364253
iteration: 8 HingeLoss: 439.7042704717554
iteration: 9 HingeLoss: 51.656467871068955
iteration: 10 HingeLoss: 6.068603040975432
iteration: 11 HingeLoss: 0.7129396256990761
iteration: 12 HingeLoss: 0.08375616372664256
iteration: 13 HingeLoss: 10868.371583566943
iteration: 14 HingeLoss: 3085.1094759353555
iteration: 15 HingeLoss: 3102.118347791965
iteration: 16 HingeLoss: 220.26762558178712
iteration: 17 HingeLoss: 25.87704575098757
iteration: 18 HingeLoss: 3.0400359336967955
iteration: 19 HingeLoss: 0.3571434918460519
iteration: 20 HingeLoss: 4538.549345071522
iteration: 21 HingeLoss: 1316.415143446905
iteration: 22 HingeLoss: 761.6722287200506
iteration: 23 HingeLoss: 3056.887535494574
iteration: 24 HingeLoss: 2253.609255569371
iteration: 25 HingeLoss: 1767.0202796824633
iteration: 26 HingeLoss: 1312.4450809751984
iteration: 27 HingeLoss: 412.65429549937517
iteration: 28 HingeLoss: 347.57863860775564
iteration: 29 HingeLoss: 3607.6702234739305
iteration: 30 HingeLoss: 1845.084481424049
iteration: 31 HingeLoss: 3534.730710573836
iteration: 32 HingeLoss: 666.5632735707911
iteration: 33 HingeLoss: 2067.5443935008934
iteration: 34 HingeLoss: 878.6798922901644
iteration: 35 HingeLoss: 3153.717958976537
iteration: 36 HingeLoss: 1564.1524950652517

```

Output\_hinge\_train.txt

iteration: 37 HingeLoss: 891.9994168021883  
iteration: 38 HingeLoss: 1059.9146011655093  
iteration: 39 HingeLoss: 1309.1664340871985  
iteration: 40 HingeLoss: 248.9859580413626  
iteration: 41 HingeLoss: 29.250876112964992  
iteration: 42 HingeLoss: 3.597420847258655  
iteration: 43 HingeLoss: 1964.6178826687767  
iteration: 44 HingeLoss: 651.3548211430301  
iteration: 45 HingeLoss: 1936.7595768042288  
iteration: 46 HingeLoss: 1302.7307179906038  
iteration: 47 HingeLoss: 492.8549641490795  
iteration: 48 HingeLoss: 3946.5760067258834  
iteration: 49 HingeLoss: 2337.305121583444  
iteration: 50 HingeLoss: 3375.3927291163063  
iteration: 51 HingeLoss: 1248.5833835831586  
iteration: 52 HingeLoss: 290.8374365389966  
iteration: 53 HingeLoss: 1367.2559127110653  
iteration: 54 HingeLoss: 1576.2814961082734  
iteration: 55 HingeLoss: 2676.8085003566366  
iteration: 56 HingeLoss: 2241.901980513469  
iteration: 57 HingeLoss: 1787.304420912757  
iteration: 58 HingeLoss: 4700.20494661993  
iteration: 59 HingeLoss: 2177.862346114481  
iteration: 60 HingeLoss: 555.7181762083269  
iteration: 61 HingeLoss: 2750.2917679271914  
iteration: 62 HingeLoss: 434.1045260053364  
iteration: 63 HingeLoss: 850.6046297746999  
iteration: 64 HingeLoss: 4087.0574445694842  
iteration: 65 HingeLoss: 1664.5887714541166  
iteration: 66 HingeLoss: 1679.602246798899  
iteration: 67 HingeLoss: 3658.8516809826715  
iteration: 68 HingeLoss: 774.8579760490229  
iteration: 69 HingeLoss: 1513.9975172362845  
iteration: 70 HingeLoss: 5678.0478645109115  
iteration: 71 HingeLoss: 1352.2812114070762  
iteration: 72 HingeLoss: 4034.0696756175653  
iteration: 73 HingeLoss: 2897.26152265621  
iteration: 74 HingeLoss: 823.3043170798263  
iteration: 75 HingeLoss: 3006.3287788356483  
iteration: 76 HingeLoss: 1592.1868159832052  
iteration: 77 HingeLoss: 388.8771717383403  
iteration: 78 HingeLoss: 3902.3208083750774  
iteration: 79 HingeLoss: 5377.789667688638  
iteration: 80 HingeLoss: 1142.2120834930865  
iteration: 81 HingeLoss: 3258.9346580382767  
iteration: 82 HingeLoss: 3199.7189821319535  
iteration: 83 HingeLoss: 480.6350669660656  
iteration: 84 HingeLoss: 2114.2389485841068  
iteration: 85 HingeLoss: 2968.432501835404  
iteration: 86 HingeLoss: 220.43354422902064  
iteration: 87 HingeLoss: 25.896537877504414  
iteration: 88 HingeLoss: 3.042325869171099

# Output\_hinge\_train.txt

```

iteration: 89 HingeLoss: 0.357412513518569
iteration: 90 HingeLoss: 0.5625105109132004
iteration: 91 HingeLoss: 3652.987609872568
iteration: 92 HingeLoss: 1140.079587295605
iteration: 93 HingeLoss: 736.1096076532757
iteration: 94 HingeLoss: 4572.482701477091
iteration: 95 HingeLoss: 1157.486019367348
iteration: 96 HingeLoss: 2192.1554842785167
iteration: 97 HingeLoss: 2680.278081222579
iteration: 98 HingeLoss: 310.5432992607435
iteration: 99 HingeLoss: 2964.2186871468425
[-0.04575023 0.02182507 -0.02539069 ... 0.0327036 0.01233592
 0.03860942]

```

## CROSS VALIDATION 1

```

iteration: 0 HingeLoss: 1894.6791806238748
iteration: 1 HingeLoss: 1556.6560380923192
iteration: 2 HingeLoss: 1517.2521539847162
iteration: 3 HingeLoss: 294.26478485221423
iteration: 4 HingeLoss: 37.518527703756
iteration: 5 HingeLoss: 4.407677502926082
iteration: 6 HingeLoss: 0.517814055050348
iteration: 7 HingeLoss: 0.09451666108709342
iteration: 8 HingeLoss: 3581.627337616641
iteration: 9 HingeLoss: 1068.9505197936114
iteration: 10 HingeLoss: 129.9358100498763
iteration: 11 HingeLoss: 15.264861971755394
iteration: 12 HingeLoss: 3827.5922299405674
iteration: 13 HingeLoss: 588.7013359714338
iteration: 14 HingeLoss: 69.16064657420046
iteration: 15 HingeLoss: 8.124994360117384
iteration: 16 HingeLoss: 0.9545245254628024
iteration: 17 HingeLoss: 0.6919558005600266
iteration: 18 HingeLoss: 1601.7504912680602
iteration: 19 HingeLoss: 789.9012493737378
iteration: 20 HingeLoss: 1623.614812980627
iteration: 21 HingeLoss: 6760.115006499534
iteration: 22 HingeLoss: 331.16851039501773
iteration: 23 HingeLoss: 38.90568426541782
iteration: 24 HingeLoss: 4.57064068789299
iteration: 25 HingeLoss: 0.5369589737917062
iteration: 26 HingeLoss: 12599.351712603755
iteration: 27 HingeLoss: 3056.3626060020297
iteration: 28 HingeLoss: 1517.704632054143
iteration: 29 HingeLoss: 704.6758531417374
iteration: 30 HingeLoss: 3732.868260205577
iteration: 31 HingeLoss: 926.3884708202706
iteration: 32 HingeLoss: 921.7644053024394
iteration: 33 HingeLoss: 1171.9885958011937
iteration: 34 HingeLoss: 159.22333422234615
iteration: 35 HingeLoss: 2532.11786205668
iteration: 36 HingeLoss: 1562.0746688422378
iteration: 37 HingeLoss: 3848.679553664111

```

Output\_hinge\_train.txt

```

iteration: 38 HingeLoss: 873.7804854912481
iteration: 39 HingeLoss: 2328.5224945705213
iteration: 40 HingeLoss: 2197.326902647895
iteration: 41 HingeLoss: 1036.938901118081
iteration: 42 HingeLoss: 1496.2253690422176
iteration: 43 HingeLoss: 1468.3507902782198
iteration: 44 HingeLoss: 258.43470472929954
iteration: 45 HingeLoss: 30.360915092535542
iteration: 46 HingeLoss: 3.566801007711745
iteration: 47 HingeLoss: 0.4190278649322178
iteration: 48 HingeLoss: 0.04922740326977136
iteration: 49 HingeLoss: 4625.319359795665
iteration: 50 HingeLoss: 3508.2488813500004
iteration: 51 HingeLoss: 409.36871758691115
iteration: 52 HingeLoss: 291.3094658936143
iteration: 53 HingeLoss: 2928.5037004623287
iteration: 54 HingeLoss: 634.9270127109394
iteration: 55 HingeLoss: 1698.0121732048974
iteration: 56 HingeLoss: 3576.476049283676
iteration: 57 HingeLoss: 176.4280156856058
iteration: 58 HingeLoss: 20.72676736580698
iteration: 59 HingeLoss: 2.434981109813222
iteration: 60 HingeLoss: 0.2860616371334658
iteration: 61 HingeLoss: 0.033606527750745276
iteration: 62 HingeLoss: 6447.606003915765
iteration: 63 HingeLoss: 1043.791943902797
iteration: 64 HingeLoss: 365.99997872410745
iteration: 65 HingeLoss: 42.99768597082167
iteration: 66 HingeLoss: 5.051369142944758
iteration: 67 HingeLoss: 0.6608820959640733
iteration: 68 HingeLoss: 5607.886853106458
iteration: 69 HingeLoss: 4455.000077369851
iteration: 70 HingeLoss: 513.3620171385194
iteration: 71 HingeLoss: 314.1539423001481
iteration: 72 HingeLoss: 3032.642952006212
iteration: 73 HingeLoss: 979.1338778150276
iteration: 74 HingeLoss: 5437.155557660464
iteration: 75 HingeLoss: 4181.3130361556205
iteration: 76 HingeLoss: 1411.6907204196773
iteration: 77 HingeLoss: 1754.0178472344096
iteration: 78 HingeLoss: 1867.8785350790597
iteration: 79 HingeLoss: 252.92489356485086
iteration: 80 HingeLoss: 3325.3643864540345
iteration: 81 HingeLoss: 1365.500359013862
iteration: 82 HingeLoss: 1146.0594781985342
iteration: 83 HingeLoss: 362.9653912264123
iteration: 84 HingeLoss: 42.64118256136317
iteration: 85 HingeLoss: 5.00948711415104
iteration: 86 HingeLoss: 0.5885146621046966
iteration: 87 HingeLoss: 0.690586183050952
iteration: 88 HingeLoss: 3680.1919636293237
iteration: 89 HingeLoss: 3553.87520160628

```

# Output\_hinge\_train.txt

```

iteration: 90 HingeLoss: 292.3921344105971
iteration: 91 HingeLoss: 34.35023471736897
iteration: 92 HingeLoss: 4.035466369561739
iteration: 93 HingeLoss: 0.4740866824886468
iteration: 94 HingeLoss: 0.05569571443052329
iteration: 95 HingeLoss: 0.03870999864404276
iteration: 96 HingeLoss: 3266.9814791861713
iteration: 97 HingeLoss: 3768.045629263306
iteration: 98 HingeLoss: 874.4218970657363
iteration: 99 HingeLoss: 4561.739832080584
[-0.073877 0.02481176 -0.04448277 ... 0.03342863 0.03479882
 0.04456341]

```

## CROSS VALIDATION 2

```

iteration: 0 HingeLoss: 2746.513889230369
iteration: 1 HingeLoss: 1525.093795096108
iteration: 2 HingeLoss: 619.1806744028357
iteration: 3 HingeLoss: 72.7413599585029
iteration: 4 HingeLoss: 8.545656651373452
iteration: 5 HingeLoss: 1.0039439411749251
iteration: 6 HingeLoss: 0.12956510605158064
iteration: 7 HingeLoss: 4469.26844022386
iteration: 8 HingeLoss: 6817.457976618719
iteration: 9 HingeLoss: 524.4525513665128
iteration: 10 HingeLoss: 862.8864403096522
iteration: 11 HingeLoss: 4147.07327850517
iteration: 12 HingeLoss: 2433.6058999339966
iteration: 13 HingeLoss: 2228.111615162986
iteration: 14 HingeLoss: 2990.603703683881
iteration: 15 HingeLoss: 500.32046097035783
iteration: 16 HingeLoss: 2056.7676106706394
iteration: 17 HingeLoss: 1891.5965680956872
iteration: 18 HingeLoss: 354.4088403888105
iteration: 19 HingeLoss: 41.63595877093803
iteration: 20 HingeLoss: 4.8913933999880665
iteration: 21 HingeLoss: 0.574641009831795
iteration: 22 HingeLoss: 5531.029651401025
iteration: 23 HingeLoss: 3674.1934889968034
iteration: 24 HingeLoss: 371.11424957492767
iteration: 25 HingeLoss: 973.6027440115824
iteration: 26 HingeLoss: 1903.7474433862294
iteration: 27 HingeLoss: 1487.9674760309233
iteration: 28 HingeLoss: 4184.478834723551
iteration: 29 HingeLoss: 2523.8101889194777
iteration: 30 HingeLoss: 813.0059564650667
iteration: 31 HingeLoss: 1604.413788416428
iteration: 32 HingeLoss: 3041.639172114689
iteration: 33 HingeLoss: 599.091758894142
iteration: 34 HingeLoss: 1891.5118225916713
iteration: 35 HingeLoss: 2616.448153731296
iteration: 36 HingeLoss: 394.0692187591766
iteration: 37 HingeLoss: 46.295260939746186
iteration: 38 HingeLoss: 5.4387683266095745

```

Output\_hinge\_train.txt

iteration: 39 HingeLoss: 0.6389466288791513  
iteration: 40 HingeLoss: 0.4579163971312606  
iteration: 41 HingeLoss: 3624.864961282969  
iteration: 42 HingeLoss: 1073.5092986254167  
iteration: 43 HingeLoss: 129.98218725711456  
iteration: 44 HingeLoss: 15.383430990479228  
iteration: 45 HingeLoss: 4054.4178808496995  
iteration: 46 HingeLoss: 974.5436202719522  
iteration: 47 HingeLoss: 725.9910958792725  
iteration: 48 HingeLoss: 3140.14096540366  
iteration: 49 HingeLoss: 2696.6472030024916  
iteration: 50 HingeLoss: 1846.3845119283808  
iteration: 51 HingeLoss: 2654.7727452198  
iteration: 52 HingeLoss: 435.909564132616  
iteration: 53 HingeLoss: 51.30083996810959  
iteration: 54 HingeLoss: 4899.980745650874  
iteration: 55 HingeLoss: 3068.329631187472  
iteration: 56 HingeLoss: 4397.499704901114  
iteration: 57 HingeLoss: 409.7329066313754  
iteration: 58 HingeLoss: 1973.4090550591761  
iteration: 59 HingeLoss: 2293.20395928253  
iteration: 60 HingeLoss: 779.078811861549  
iteration: 61 HingeLoss: 4169.569636825882  
iteration: 62 HingeLoss: 1750.1951140919737  
iteration: 63 HingeLoss: 2562.9386651127575  
iteration: 64 HingeLoss: 2766.063880425251  
iteration: 65 HingeLoss: 831.3531760496585  
iteration: 66 HingeLoss: 1432.4985079250057  
iteration: 67 HingeLoss: 2392.5289213058163  
iteration: 68 HingeLoss: 2196.0599042833105  
iteration: 69 HingeLoss: 345.05783860699864  
iteration: 70 HingeLoss: 1948.1216277679537  
iteration: 71 HingeLoss: 951.7781669664892  
iteration: 72 HingeLoss: 1691.9804685816125  
iteration: 73 HingeLoss: 2078.0328412426284  
iteration: 74 HingeLoss: 3164.5009663950536  
iteration: 75 HingeLoss: 850.0269162909101  
iteration: 76 HingeLoss: 1650.7131904682456  
iteration: 77 HingeLoss: 1159.234644710599  
iteration: 78 HingeLoss: 692.7881591362739  
iteration: 79 HingeLoss: 2765.695429075643  
iteration: 80 HingeLoss: 645.6789067801392  
iteration: 81 HingeLoss: 1899.3493782209734  
iteration: 82 HingeLoss: 1099.3810573686933  
iteration: 83 HingeLoss: 1110.830176541619  
iteration: 84 HingeLoss: 1195.0426042824745  
iteration: 85 HingeLoss: 3237.254352568888  
iteration: 86 HingeLoss: 199.82364963064742  
iteration: 87 HingeLoss: 23.475286983114085  
iteration: 88 HingeLoss: 2.7578772580632718  
iteration: 89 HingeLoss: 9791.519557470108  
iteration: 90 HingeLoss: 3580.129965826763



# Output\_hinge\_train.txt

```
iteration: 91 HingeLoss: 260.62822934253376
iteration: 92 HingeLoss: 30.618610414862907
iteration: 93 HingeLoss: 3.5970750601425907
iteration: 94 HingeLoss: 6502.478224661762
iteration: 95 HingeLoss: 3833.335628517787
iteration: 96 HingeLoss: 3462.8653801666164
iteration: 97 HingeLoss: 2747.835451377207
iteration: 98 HingeLoss: 2653.5705985405657
iteration: 99 HingeLoss: 1196.5704473360051
[0.03045829 0.01542833 0.09215546 ... 0.06641615 0.03056227 0.01508318]
```

## CROSS VALIDATION 3

```
iteration: 0 HingeLoss: 1882.6724642063405
iteration: 1 HingeLoss: 1718.2164823587555
iteration: 2 HingeLoss: 1670.534122932262
iteration: 3 HingeLoss: 1031.2654125006407
iteration: 4 HingeLoss: 558.3489791090631
iteration: 5 HingeLoss: 2605.3171204781906
iteration: 6 HingeLoss: 1767.9365821720316
iteration: 7 HingeLoss: 2104.839973362408
iteration: 8 HingeLoss: 467.26925888848695
iteration: 9 HingeLoss: 3246.070730446351
iteration: 10 HingeLoss: 3143.4457704111815
iteration: 11 HingeLoss: 2548.360850666786
iteration: 12 HingeLoss: 614.4588865806147
iteration: 13 HingeLoss: 796.9325321177619
iteration: 14 HingeLoss: 3082.113981308167
iteration: 15 HingeLoss: 2749.3227607737635
iteration: 16 HingeLoss: 1065.9953355324594
iteration: 17 HingeLoss: 892.6737350483885
iteration: 18 HingeLoss: 2873.420946012174
iteration: 19 HingeLoss: 2424.9675279211833
iteration: 20 HingeLoss: 3818.255118428377
iteration: 21 HingeLoss: 237.53661111529948
iteration: 22 HingeLoss: 2253.9353947085224
iteration: 23 HingeLoss: 3382.8718854055633
iteration: 24 HingeLoss: 1805.477346096707
iteration: 25 HingeLoss: 1263.3838686159722
iteration: 26 HingeLoss: 421.0818442418754
iteration: 27 HingeLoss: 2331.6599374077814
iteration: 28 HingeLoss: 1459.430317555713
iteration: 29 HingeLoss: 837.6809097437688
iteration: 30 HingeLoss: 182.07683649984938
iteration: 31 HingeLoss: 2909.8885012367336
iteration: 32 HingeLoss: 1874.8703888179061
iteration: 33 HingeLoss: 3825.989337993832
iteration: 34 HingeLoss: 468.97045543899407
iteration: 35 HingeLoss: 1397.549242443601
iteration: 36 HingeLoss: 4787.9134122212035
iteration: 37 HingeLoss: 238.28907337563024
iteration: 38 HingeLoss: 27.994205854877443
iteration: 39 HingeLoss: 3.2887599516990758
iteration: 40 HingeLoss: 0.38636359523716357
```

Output\_hinge\_train.txt

iteration: 41 HingeLoss: 0.4299221694232137  
iteration: 42 HingeLoss: 4477.008359710662  
iteration: 43 HingeLoss: 6828.081499748162  
iteration: 44 HingeLoss: 524.80170900054598  
iteration: 45 HingeLoss: 863.8629551669356  
iteration: 46 HingeLoss: 2360.847950112986  
iteration: 47 HingeLoss: 1982.7976092748052  
iteration: 48 HingeLoss: 1107.1325979305059  
iteration: 49 HingeLoss: 922.6426966760954  
iteration: 50 HingeLoss: 2089.7998545123123  
iteration: 51 HingeLoss: 804.533769337085  
iteration: 52 HingeLoss: 4197.845914675991  
iteration: 53 HingeLoss: 1480.2540027964792  
iteration: 54 HingeLoss: 113.85629624330639  
iteration: 55 HingeLoss: 13.37584031763244  
iteration: 56 HingeLoss: 1.6529449823839308  
iteration: 57 HingeLoss: 3563.325193400314  
iteration: 58 HingeLoss: 1925.621158403235  
iteration: 59 HingeLoss: 348.16646774026395  
iteration: 60 HingeLoss: 5014.479051608164  
iteration: 61 HingeLoss: 1314.8108626974854  
iteration: 62 HingeLoss: 1626.7347618160288  
iteration: 63 HingeLoss: 2046.9619487033974  
iteration: 64 HingeLoss: 3082.7784591341137  
iteration: 65 HingeLoss: 395.74658742993375  
iteration: 66 HingeLoss: 2877.6191218041363  
iteration: 67 HingeLoss: 1755.3392547209623  
iteration: 68 HingeLoss: 121.0186424130665  
iteration: 69 HingeLoss: 1865.3060314421962  
iteration: 70 HingeLoss: 1818.7759724222474  
iteration: 71 HingeLoss: 1956.393365642387  
iteration: 72 HingeLoss: 3329.0323737600625  
iteration: 73 HingeLoss: 347.3895138535976  
iteration: 74 HingeLoss: 140.78123913237513  
iteration: 75 HingeLoss: 4865.661128316338  
iteration: 76 HingeLoss: 1916.8753454102302  
iteration: 77 HingeLoss: 4315.565022491327  
iteration: 78 HingeLoss: 584.2571741572638  
iteration: 79 HingeLoss: 3136.096612159602  
iteration: 80 HingeLoss: 647.437563839105  
iteration: 81 HingeLoss: 2539.2530785935146  
iteration: 82 HingeLoss: 4864.990036423182  
iteration: 83 HingeLoss: 797.993756678553  
iteration: 84 HingeLoss: 888.586839229362  
iteration: 85 HingeLoss: 949.8394391829255  
iteration: 86 HingeLoss: 587.0863368815408  
iteration: 87 HingeLoss: 643.1078103419964  
iteration: 88 HingeLoss: 2024.0544225568947  
iteration: 89 HingeLoss: 835.3548292875212  
iteration: 90 HingeLoss: 3807.8854754533204  
iteration: 91 HingeLoss: 5530.80437381833  
iteration: 92 HingeLoss: 1233.5467928987528

Output\_hinge\_train.txt

iteration: 93 HingeLoss: 1413.1628214123596  
iteration: 94 HingeLoss: 436.95077196047754  
iteration: 95 HingeLoss: 2106.9739721042524  
iteration: 96 HingeLoss: 4770.925806343506  
iteration: 97 HingeLoss: 622.5446987883661  
iteration: 98 HingeLoss: 688.9670025770972  
iteration: 99 HingeLoss: 2586.657525760909  
[-0.10508007 -0.03401848 -0.06972628 ... 0.09643043 -0.02700662  
0.01567931]

CROSS VALIDATION 4

iteration: 0 HingeLoss: 1882.6724642063405  
iteration: 1 HingeLoss: 1718.2164823587555  
iteration: 2 HingeLoss: 3595.5566374154787  
iteration: 3 HingeLoss: 1226.8249918569118  
iteration: 4 HingeLoss: 1699.2424176934887  
iteration: 5 HingeLoss: 2596.889577142057  
iteration: 6 HingeLoss: 2113.7633271229624  
iteration: 7 HingeLoss: 1987.04604444586  
iteration: 8 HingeLoss: 1232.3536909469321  
iteration: 9 HingeLoss: 6517.3577245614715  
iteration: 10 HingeLoss: 504.83474461809965  
iteration: 11 HingeLoss: 59.3079974810918  
iteration: 12 HingeLoss: 6.967504916639763  
iteration: 13 HingeLoss: 0.8185426388553492  
iteration: 14 HingeLoss: 0.09616240815620507  
iteration: 15 HingeLoss: 0.011297161935671287  
iteration: 16 HingeLoss: 2917.387214731729  
iteration: 17 HingeLoss: 487.13920634301286  
iteration: 18 HingeLoss: 1299.1818257496398  
iteration: 19 HingeLoss: 2366.8890722932574  
iteration: 20 HingeLoss: 470.13056576725876  
iteration: 21 HingeLoss: 3430.66946046773  
iteration: 22 HingeLoss: 4829.689186284272  
iteration: 23 HingeLoss: 1398.5805744401323  
iteration: 24 HingeLoss: 297.1403061611634  
iteration: 25 HingeLoss: 34.90805004451209  
iteration: 26 HingeLoss: 4.100998527103997  
iteration: 27 HingeLoss: 0.4817854018733178  
iteration: 28 HingeLoss: 0.05660016016200538  
iteration: 29 HingeLoss: 0.4352284931098925  
iteration: 30 HingeLoss: 3327.7567273477944  
iteration: 31 HingeLoss: 540.5682032801938  
iteration: 32 HingeLoss: 4448.5356211550925  
iteration: 33 HingeLoss: 1951.6334222341532  
iteration: 34 HingeLoss: 2011.0011719142972  
iteration: 35 HingeLoss: 960.6657848478199  
iteration: 36 HingeLoss: 4288.370564549171  
iteration: 37 HingeLoss: 1535.5178834471415  
iteration: 38 HingeLoss: 1182.2740876380985  
iteration: 39 HingeLoss: 1982.4625735909572  
iteration: 40 HingeLoss: 2390.6706565084605  
iteration: 41 HingeLoss: 6187.199847675944

Output\_hinge\_train.txt

iteration: 42 HingeLoss: 741.4774478740826  
iteration: 43 HingeLoss: 1014.3976899049624  
iteration: 44 HingeLoss: 3025.774472899132  
iteration: 45 HingeLoss: 1730.3549219969923  
iteration: 46 HingeLoss: 336.3672075244958  
iteration: 47 HingeLoss: 3064.2392217424017  
iteration: 48 HingeLoss: 451.89072813647704  
iteration: 49 HingeLoss: 2276.0850580122387  
iteration: 50 HingeLoss: 1669.6876657859186  
iteration: 51 HingeLoss: 1032.8247395609724  
iteration: 52 HingeLoss: 2572.5577952792764  
iteration: 53 HingeLoss: 1861.771875761412  
iteration: 54 HingeLoss: 2378.863330915615  
iteration: 55 HingeLoss: 1170.7466234196022  
iteration: 56 HingeLoss: 1022.8762265654384  
iteration: 57 HingeLoss: 1536.1818239248173  
iteration: 58 HingeLoss: 1041.5147762870472  
iteration: 59 HingeLoss: 2990.256191935563  
iteration: 60 HingeLoss: 1116.1092089196607  
iteration: 61 HingeLoss: 541.9492392256592  
iteration: 62 HingeLoss: 2196.249499264754  
iteration: 63 HingeLoss: 1553.247038745444  
iteration: 64 HingeLoss: 2147.007523359511  
iteration: 65 HingeLoss: 466.7175338250225  
iteration: 66 HingeLoss: 54.82998667497692  
iteration: 67 HingeLoss: 6.751008750060912  
iteration: 68 HingeLoss: 1622.7676297297935  
iteration: 69 HingeLoss: 1925.3307490646657  
iteration: 70 HingeLoss: 3081.8646874666983  
iteration: 71 HingeLoss: 3229.0682828053173  
iteration: 72 HingeLoss: 745.4439078861913  
iteration: 73 HingeLoss: 3438.9831123107956  
iteration: 74 HingeLoss: 550.8737586127033  
iteration: 75 HingeLoss: 4758.980513473138  
iteration: 76 HingeLoss: 448.64546954625996  
iteration: 77 HingeLoss: 52.70688014526731  
iteration: 78 HingeLoss: 6.19200549925788  
iteration: 79 HingeLoss: 0.727436949353993  
iteration: 80 HingeLoss: 0.08545930964513279  
iteration: 81 HingeLoss: 0.6024409411626876  
iteration: 82 HingeLoss: 4491.491889669711  
iteration: 83 HingeLoss: 6073.210739802861  
iteration: 84 HingeLoss: 684.2666653671581  
iteration: 85 HingeLoss: 2755.263254242458  
iteration: 86 HingeLoss: 1896.2922193178042  
iteration: 87 HingeLoss: 2989.416039591755  
iteration: 88 HingeLoss: 1464.9116750115327  
iteration: 89 HingeLoss: 2431.21469447299  
iteration: 90 HingeLoss: 6637.702915525129  
iteration: 91 HingeLoss: 3179.434407315269  
iteration: 92 HingeLoss: 615.9917611065457  
iteration: 93 HingeLoss: 1194.0731971877003

Output\_hinge\_train.txt

iteration: 94 HingeLoss: 4648.780855309839  
iteration: 95 HingeLoss: 306.242951919593  
iteration: 96 HingeLoss: 2317.3318014015476  
iteration: 97 HingeLoss: 2148.101004360966  
iteration: 98 HingeLoss: 984.1488526679315  
iteration: 99 HingeLoss: 2013.6613808871066  
[-0.09747887 -0.07123912 0.02347923 ... 0.02320241 0.01014825  
0.0116962 ]

CROSS VALIDATION 5

iteration: 0 HingeLoss: 1411.2290699987866  
iteration: 1 HingeLoss: 152.7803582139827  
iteration: 2 HingeLoss: 17.948640018764515  
iteration: 3 HingeLoss: 2.108606644788656  
iteration: 4 HingeLoss: 9774.747480387165  
iteration: 5 HingeLoss: 3314.6259637751637  
iteration: 6 HingeLoss: 273.9562269753092  
iteration: 7 HingeLoss: 32.18438388521032  
iteration: 8 HingeLoss: 3.7810221636755985  
iteration: 9 HingeLoss: 0.9632929644506534  
iteration: 10 HingeLoss: 3562.2496093756668  
iteration: 11 HingeLoss: 751.2424994946441  
iteration: 12 HingeLoss: 2700.878765021634  
iteration: 13 HingeLoss: 4461.415372415718  
iteration: 14 HingeLoss: 3350.409957597991  
iteration: 15 HingeLoss: 395.83228017256886  
iteration: 16 HingeLoss: 2138.8105329795317  
iteration: 17 HingeLoss: 2581.1386244009855  
iteration: 18 HingeLoss: 1289.325187362167  
iteration: 19 HingeLoss: 146.84207363336367  
iteration: 20 HingeLoss: 17.251010208804047  
iteration: 21 HingeLoss: 2.0266490785693  
iteration: 22 HingeLoss: 0.2380907806529281  
iteration: 23 HingeLoss: 5213.486351067169  
iteration: 24 HingeLoss: 1944.7669313385163  
iteration: 25 HingeLoss: 475.5079977340397  
iteration: 26 HingeLoss: 3049.2637385922612  
iteration: 27 HingeLoss: 1623.67105891976  
iteration: 28 HingeLoss: 1803.753414366427  
iteration: 29 HingeLoss: 1764.8163392000683  
iteration: 30 HingeLoss: 3806.081467643316  
iteration: 31 HingeLoss: 1840.8310864286454  
iteration: 32 HingeLoss: 1111.5955175607387  
iteration: 33 HingeLoss: 3346.3506321864934  
iteration: 34 HingeLoss: 441.96088279772414  
iteration: 35 HingeLoss: 3544.937604941483  
iteration: 36 HingeLoss: 1372.348752179213  
iteration: 37 HingeLoss: 1179.6544908136898  
iteration: 38 HingeLoss: 485.5806512533598  
iteration: 39 HingeLoss: 5369.951461810477  
iteration: 40 HingeLoss: 2009.8676294794654  
iteration: 41 HingeLoss: 2314.6431634840033  
iteration: 42 HingeLoss: 3494.0002201528478

Output\_hinge\_train.txt

iteration: 43 HingeLoss: 4062.7901550276574  
iteration: 44 HingeLoss: 450.84025552273636  
iteration: 45 HingeLoss: 1537.5447315281644  
iteration: 46 HingeLoss: 3433.0353440276867  
iteration: 47 HingeLoss: 957.4368266654221  
iteration: 48 HingeLoss: 3028.247464868105  
iteration: 49 HingeLoss: 3899.9877428023815  
iteration: 50 HingeLoss: 2351.1661266354563  
iteration: 51 HingeLoss: 1700.2591712347435  
iteration: 52 HingeLoss: 1422.310389796305  
iteration: 53 HingeLoss: 1633.878179291875  
iteration: 54 HingeLoss: 817.4655713427317  
iteration: 55 HingeLoss: 3166.885488341672  
iteration: 56 HingeLoss: 1617.3636213176055  
iteration: 57 HingeLoss: 5371.973623332033  
iteration: 58 HingeLoss: 598.1704966311839  
iteration: 59 HingeLoss: 70.27308378765211  
iteration: 60 HingeLoss: 8.255683509698743  
iteration: 61 HingeLoss: 0.9698778897801519  
iteration: 62 HingeLoss: 0.11394127693719265  
iteration: 63 HingeLoss: 0.22396371340161683  
iteration: 64 HingeLoss: 2130.0505283948883  
iteration: 65 HingeLoss: 2110.9914372571193  
iteration: 66 HingeLoss: 357.69353536045634  
iteration: 67 HingeLoss: 3515.1045071933063  
iteration: 68 HingeLoss: 1537.5100541548718  
iteration: 69 HingeLoss: 388.7310005237085  
iteration: 70 HingeLoss: 45.66812693790135  
iteration: 71 HingeLoss: 5.365092609559122  
iteration: 72 HingeLoss: 0.6302912039349924  
iteration: 73 HingeLoss: 0.074046625225071  
iteration: 74 HingeLoss: 7765.722458661055  
iteration: 75 HingeLoss: 1738.7095271264452  
iteration: 76 HingeLoss: 1210.957607388446  
iteration: 77 HingeLoss: 2245.777388708436  
iteration: 78 HingeLoss: 2345.4255579460814  
iteration: 79 HingeLoss: 688.7690301600047  
iteration: 80 HingeLoss: 1362.9861873727937  
iteration: 81 HingeLoss: 2245.677604896982  
iteration: 82 HingeLoss: 1922.5161332481853  
iteration: 83 HingeLoss: 1571.708357449523  
iteration: 84 HingeLoss: 3048.948418307931  
iteration: 85 HingeLoss: 1256.7648210563193  
iteration: 86 HingeLoss: 839.2605488862217  
iteration: 87 HingeLoss: 1617.4274580584047  
iteration: 88 HingeLoss: 4392.278580616334  
iteration: 89 HingeLoss: 2340.3026381486957  
iteration: 90 HingeLoss: 2246.8694548490785  
iteration: 91 HingeLoss: 2121.0505612345987  
iteration: 92 HingeLoss: 1546.9177797267748  
iteration: 93 HingeLoss: 4762.736533358476  
iteration: 94 HingeLoss: 247.87732017804908

Output\_hinge\_train.txt

iteration: 95 HingeLoss: 1450.2738741510645  
iteration: 96 HingeLoss: 2752.183534295327  
iteration: 97 HingeLoss: 4222.127613773186  
iteration: 98 HingeLoss: 2016.3223097912526  
iteration: 99 HingeLoss: 91.56302752221475  
[-0.07085472 -0.03003943 -0.01812999 ... 0.0167581 0.01442267  
0.00076138]

CROSS VALIDATION 6

iteration: 0 HingeLoss: 1874.9418352592647  
iteration: 1 HingeLoss: 1713.7862670446282  
iteration: 2 HingeLoss: 3596.2098499004815  
iteration: 3 HingeLoss: 1221.4183296615383  
iteration: 4 HingeLoss: 1699.155847079845  
iteration: 5 HingeLoss: 2596.908297663245  
iteration: 6 HingeLoss: 1783.8309724239496  
iteration: 7 HingeLoss: 460.70008671730284  
iteration: 8 HingeLoss: 763.0763928981438  
iteration: 9 HingeLoss: 1807.4061333393115  
iteration: 10 HingeLoss: 2153.277856318586  
iteration: 11 HingeLoss: 1630.503937969719  
iteration: 12 HingeLoss: 3208.129919249887  
iteration: 13 HingeLoss: 6388.637861299927  
iteration: 14 HingeLoss: 1430.2158081256862  
iteration: 15 HingeLoss: 109.31257716053766  
iteration: 16 HingeLoss: 12.84204409463377  
iteration: 17 HingeLoss: 1.5086836374401609  
iteration: 18 HingeLoss: 7039.477363661271  
iteration: 19 HingeLoss: 856.846430553752  
iteration: 20 HingeLoss: 538.7417343642967  
iteration: 21 HingeLoss: 1301.8878152818907  
iteration: 22 HingeLoss: 1885.1609198648314  
iteration: 23 HingeLoss: 6058.876792650109  
iteration: 24 HingeLoss: 484.4909003381904  
iteration: 25 HingeLoss: 1501.140209217424  
iteration: 26 HingeLoss: 1147.492258454424  
iteration: 27 HingeLoss: 317.12628666161027  
iteration: 28 HingeLoss: 1328.7174962318895  
iteration: 29 HingeLoss: 930.1890707193363  
iteration: 30 HingeLoss: 460.6770228000788  
iteration: 31 HingeLoss: 2997.807210850062  
iteration: 32 HingeLoss: 1397.3670641279255  
iteration: 33 HingeLoss: 599.1415605063424  
iteration: 34 HingeLoss: 3807.5694836519847  
iteration: 35 HingeLoss: 206.0685732029482  
iteration: 36 HingeLoss: 3345.1434497467335  
iteration: 37 HingeLoss: 2542.5223712295465  
iteration: 38 HingeLoss: 370.80107082301305  
iteration: 39 HingeLoss: 3239.428998615636  
iteration: 40 HingeLoss: 4136.693066847006  
iteration: 41 HingeLoss: 1875.165060344269  
iteration: 42 HingeLoss: 2472.4231341157038  
iteration: 43 HingeLoss: 702.6926982970364

Output\_hinge\_train.txt

```

iteration: 44 HingeLoss: 1167.2082035060535
iteration: 45 HingeLoss: 785.416350570686
iteration: 46 HingeLoss: 1924.1921184605133
iteration: 47 HingeLoss: 1501.1945288110128
iteration: 48 HingeLoss: 1188.5750368890958
iteration: 49 HingeLoss: 943.288296108868
iteration: 50 HingeLoss: 4585.037871430433
iteration: 51 HingeLoss: 526.7831559340002
iteration: 52 HingeLoss: 2180.900314620004
iteration: 53 HingeLoss: 2939.669920412308
iteration: 54 HingeLoss: 1044.003489699582
iteration: 55 HingeLoss: 549.552093227958
iteration: 56 HingeLoss: 3905.2206264942856
iteration: 57 HingeLoss: 3775.986452817178
iteration: 58 HingeLoss: 553.4431061150125
iteration: 59 HingeLoss: 2391.595246236688
iteration: 60 HingeLoss: 4337.588464207397
iteration: 61 HingeLoss: 1543.9668210025498
iteration: 62 HingeLoss: 2405.9220491063697
iteration: 63 HingeLoss: 1396.3077512602238
iteration: 64 HingeLoss: 1216.8301213260615
iteration: 65 HingeLoss: 4656.814614699223
iteration: 66 HingeLoss: 569.7341454336658
iteration: 67 HingeLoss: 2662.8316268186873
iteration: 68 HingeLoss: 2191.022458583931
iteration: 69 HingeLoss: 3360.835974172496
iteration: 70 HingeLoss: 307.22334902099
iteration: 71 HingeLoss: 36.09260615303573
iteration: 72 HingeLoss: 4.240160206147458
iteration: 73 HingeLoss: 5171.351098460513
iteration: 74 HingeLoss: 2442.8866737986973
iteration: 75 HingeLoss: 1266.7312077653423
iteration: 76 HingeLoss: 2452.420628318822
iteration: 77 HingeLoss: 2113.2284800815823
iteration: 78 HingeLoss: 694.5201523198969
iteration: 79 HingeLoss: 1385.687435025127
iteration: 80 HingeLoss: 3705.1128180180563
iteration: 81 HingeLoss: 438.97401299098135
iteration: 82 HingeLoss: 1774.3103151898817
iteration: 83 HingeLoss: 5192.881166812066
iteration: 84 HingeLoss: 186.9677973047183
iteration: 85 HingeLoss: 4950.355143514799
iteration: 86 HingeLoss: 1426.2043932722058
iteration: 87 HingeLoss: 3400.205339602592
iteration: 88 HingeLoss: 274.79104549773285
iteration: 89 HingeLoss: 377.2112845314995
iteration: 90 HingeLoss: 4200.0495008846865
iteration: 91 HingeLoss: 5232.725928221117
iteration: 92 HingeLoss: 307.50444800589173
iteration: 93 HingeLoss: 36.125629668287466
iteration: 94 HingeLoss: 4.244039809483491
iteration: 95 HingeLoss: 0.49858989503765605

```



Output\_hinge\_train.txt

iteration: 96 HingeLoss: 10492.367485630211  
iteration: 97 HingeLoss: 3722.3799688247973  
iteration: 98 HingeLoss: 238.0674227280702  
iteration: 99 HingeLoss: 27.968166331672457  
[-0.02488947 -0.00816 -0.0188872 ... 0.01553762 0.01134306  
0.00338132]

CROSS VALIDATION 7

iteration: 0 HingeLoss: 1874.9418352592647  
iteration: 1 HingeLoss: 1713.7862670446282  
iteration: 2 HingeLoss: 3004.5259625437184  
iteration: 3 HingeLoss: 1562.0017219910208  
iteration: 4 HingeLoss: 1063.8538095658928  
iteration: 5 HingeLoss: 1721.2129178588343  
iteration: 6 HingeLoss: 808.0000846756634  
iteration: 7 HingeLoss: 599.3623439113933  
iteration: 8 HingeLoss: 3692.7186957441268  
iteration: 9 HingeLoss: 1353.8446688832125  
iteration: 10 HingeLoss: 591.7547729727735  
iteration: 11 HingeLoss: 3530.3193522008823  
iteration: 12 HingeLoss: 2260.483144200847  
iteration: 13 HingeLoss: 1736.3154952715145  
iteration: 14 HingeLoss: 3091.0667792962995  
iteration: 15 HingeLoss: 201.78347216650906  
iteration: 16 HingeLoss: 23.705526979983144  
iteration: 17 HingeLoss: 2.7849258582238785  
iteration: 18 HingeLoss: 0.327173154275498  
iteration: 19 HingeLoss: 6007.011050937619  
iteration: 20 HingeLoss: 1505.9901716777294  
iteration: 21 HingeLoss: 1762.4055756276857  
iteration: 22 HingeLoss: 1351.7958609309635  
iteration: 23 HingeLoss: 350.1936791124281  
iteration: 24 HingeLoss: 3427.8817007507682  
iteration: 25 HingeLoss: 544.18819283739  
iteration: 26 HingeLoss: 1561.9303799349782  
iteration: 27 HingeLoss: 534.7289473137432  
iteration: 28 HingeLoss: 1855.9650327376692  
iteration: 29 HingeLoss: 1048.5403928985284  
iteration: 30 HingeLoss: 576.0451805211228  
iteration: 31 HingeLoss: 2888.709436370092  
iteration: 32 HingeLoss: 3367.481360970792  
iteration: 33 HingeLoss: 2109.1167883688604  
iteration: 34 HingeLoss: 2180.2646878428304  
iteration: 35 HingeLoss: 523.6906244849879  
iteration: 36 HingeLoss: 2732.311498728142  
iteration: 37 HingeLoss: 3802.1677679827276  
iteration: 38 HingeLoss: 781.5328998961222  
iteration: 39 HingeLoss: 955.8598362055857  
iteration: 40 HingeLoss: 3043.4152522051477  
iteration: 41 HingeLoss: 419.280840481342  
iteration: 42 HingeLoss: 2331.365322803206  
iteration: 43 HingeLoss: 1612.545069018137  
iteration: 44 HingeLoss: 1320.3338944317993

Output\_hinge\_train.txt

iteration: 45 HingeLoss: 72.20485879924962  
iteration: 46 HingeLoss: 8.482628482768167  
iteration: 47 HingeLoss: 0.9965393904685196  
iteration: 48 HingeLoss: 0.11707347065508748  
iteration: 49 HingeLoss: 0.4898278703209859  
iteration: 50 HingeLoss: 3393.268871705523  
iteration: 51 HingeLoss: 1698.699940691568  
iteration: 52 HingeLoss: 258.3099375101748  
iteration: 53 HingeLoss: 2400.332488051368  
iteration: 54 HingeLoss: 2324.1906169537656  
iteration: 55 HingeLoss: 1918.131956657725  
iteration: 56 HingeLoss: 251.26445412722015  
iteration: 57 HingeLoss: 3774.6584192389187  
iteration: 58 HingeLoss: 2338.1077799828336  
iteration: 59 HingeLoss: 272.5899290096417  
iteration: 60 HingeLoss: 32.0238711685836  
iteration: 61 HingeLoss: 3.7621651260115523  
iteration: 62 HingeLoss: 0.6975679486528178  
iteration: 63 HingeLoss: 5101.858273635648  
iteration: 64 HingeLoss: 2464.4021571388353  
iteration: 65 HingeLoss: 2180.5280555465115  
iteration: 66 HingeLoss: 235.2592255923626  
iteration: 67 HingeLoss: 27.638259267179606  
iteration: 68 HingeLoss: 3.246943338338683  
iteration: 69 HingeLoss: 0.3814509785318255  
iteration: 70 HingeLoss: 0.04481286978581389  
iteration: 71 HingeLoss: 9726.328660184558  
iteration: 72 HingeLoss: 980.5897007810038  
iteration: 73 HingeLoss: 318.9466291939171  
iteration: 74 HingeLoss: 37.46985737906235  
iteration: 75 HingeLoss: 4.401959712054697  
iteration: 76 HingeLoss: 0.517142328846451  
iteration: 77 HingeLoss: 0.060753892761072105  
iteration: 78 HingeLoss: 12976.064710169112  
iteration: 79 HingeLoss: 4194.4062937616  
iteration: 80 HingeLoss: 931.3824107868813  
iteration: 81 HingeLoss: 1448.5981158913694  
iteration: 82 HingeLoss: 1307.3837481861983  
iteration: 83 HingeLoss: 1148.3249947286677  
iteration: 84 HingeLoss: 1290.2080902007167  
iteration: 85 HingeLoss: 5271.8029075742725  
iteration: 86 HingeLoss: 1238.315608047249  
iteration: 87 HingeLoss: 862.7751262149868  
iteration: 88 HingeLoss: 1692.4795168170199  
iteration: 89 HingeLoss: 2311.051425914561  
iteration: 90 HingeLoss: 2385.3896204181183  
iteration: 91 HingeLoss: 3053.541313280496  
iteration: 92 HingeLoss: 662.6526507155517  
iteration: 93 HingeLoss: 2256.086642534532  
iteration: 94 HingeLoss: 3506.6759146483664  
iteration: 95 HingeLoss: 759.3316105469387  
iteration: 96 HingeLoss: 542.535749048757

Output\_hinge\_train.txt

iteration: 97 HingeLoss: 2408.627171337472  
iteration: 98 HingeLoss: 2141.011262544502  
iteration: 99 HingeLoss: 3577.102272932992  
[-0.14065415 -0.0508221 -0.00459518 ... 0.03347294 0.00315829  
-0.00162819]

CROSS VALIDATION 8

iteration: 0 HingeLoss: 3243.0651468918395  
iteration: 1 HingeLoss: 1455.2853179747244  
iteration: 2 HingeLoss: 442.6543787789005  
iteration: 3 HingeLoss: 2033.0871074747706  
iteration: 4 HingeLoss: 1053.4056064120011  
iteration: 5 HingeLoss: 1902.204317842276  
iteration: 6 HingeLoss: 1383.4410180331702  
iteration: 7 HingeLoss: 2346.00572552725  
iteration: 8 HingeLoss: 1462.3831850871456  
iteration: 9 HingeLoss: 1144.1642911049892  
iteration: 10 HingeLoss: 562.4730733633061  
iteration: 11 HingeLoss: 1090.936757475789  
iteration: 12 HingeLoss: 429.3318926345713  
iteration: 13 HingeLoss: 1717.4267440286053  
iteration: 14 HingeLoss: 2592.1361660834045  
iteration: 15 HingeLoss: 1326.485877095591  
iteration: 16 HingeLoss: 2927.0089304124494  
iteration: 17 HingeLoss: 1407.728118526466  
iteration: 18 HingeLoss: 1306.1741572892968  
iteration: 19 HingeLoss: 2254.6552484407894  
iteration: 20 HingeLoss: 1294.7837359578302  
iteration: 21 HingeLoss: 685.4282673165746  
iteration: 22 HingeLoss: 2317.665114844742  
iteration: 23 HingeLoss: 195.77747800666884  
iteration: 24 HingeLoss: 3461.5029719377135  
iteration: 25 HingeLoss: 5463.036255864401  
iteration: 26 HingeLoss: 522.4505993451023  
iteration: 27 HingeLoss: 2331.885482834804  
iteration: 28 HingeLoss: 1494.727784433421  
iteration: 29 HingeLoss: 1189.5397473989347  
iteration: 30 HingeLoss: 1540.1188058837765  
iteration: 31 HingeLoss: 4465.322995926645  
iteration: 32 HingeLoss: 5700.022833717084  
iteration: 33 HingeLoss: 688.1509430330481  
iteration: 34 HingeLoss: 1611.5489978789838  
iteration: 35 HingeLoss: 864.0131583152626  
iteration: 36 HingeLoss: 372.05157796512077  
iteration: 37 HingeLoss: 3347.1009611631125  
iteration: 38 HingeLoss: 2723.3655890876557  
iteration: 39 HingeLoss: 888.44749616219  
iteration: 40 HingeLoss: 1500.337270564113  
iteration: 41 HingeLoss: 748.2901313819544  
iteration: 42 HingeLoss: 1833.6571839016042  
iteration: 43 HingeLoss: 2123.298551419016  
iteration: 44 HingeLoss: 3205.304629210348  
iteration: 45 HingeLoss: 560.2338450555496

Output\_hinge\_train.txt

iteration: 46 HingeLoss: 65.81628508258115  
iteration: 47 HingeLoss: 7.732098694683609  
iteration: 48 HingeLoss: 0.9083671335948835  
iteration: 49 HingeLoss: 13204.425113390871  
iteration: 50 HingeLoss: 8492.557314245145  
iteration: 51 HingeLoss: 1842.3850533267318  
iteration: 52 HingeLoss: 802.4001859280459  
iteration: 53 HingeLoss: 2465.61898806247  
iteration: 54 HingeLoss: 1295.0259713396244  
iteration: 55 HingeLoss: 2216.01080121414  
iteration: 56 HingeLoss: 2255.3776707951465  
iteration: 57 HingeLoss: 3095.1038323590287  
iteration: 58 HingeLoss: 452.4022306552308  
iteration: 59 HingeLoss: 3226.5485802507437  
iteration: 60 HingeLoss: 363.38787169268005  
iteration: 61 HingeLoss: 802.8319484863798  
iteration: 62 HingeLoss: 1547.202875069292  
iteration: 63 HingeLoss: 2354.9879644959306  
iteration: 64 HingeLoss: 901.7981831908694  
iteration: 65 HingeLoss: 1437.8889404804472  
iteration: 66 HingeLoss: 3024.655048794731  
iteration: 67 HingeLoss: 2074.0626920029367  
iteration: 68 HingeLoss: 1229.1375636364505  
iteration: 69 HingeLoss: 279.3618718746518  
iteration: 70 HingeLoss: 582.1410765880629  
iteration: 71 HingeLoss: 3324.6896873336273  
iteration: 72 HingeLoss: 1521.3112040849828  
iteration: 73 HingeLoss: 856.4823941202096  
iteration: 74 HingeLoss: 1463.7305063470326  
iteration: 75 HingeLoss: 3851.9518815285132  
iteration: 76 HingeLoss: 2385.971658761153  
iteration: 77 HingeLoss: 507.4813770459121  
iteration: 78 HingeLoss: 3529.3249065448977  
iteration: 79 HingeLoss: 3129.405450476901  
iteration: 80 HingeLoss: 339.0479753064993  
iteration: 81 HingeLoss: 39.83136398557258  
iteration: 82 HingeLoss: 4.679389562839715  
iteration: 83 HingeLoss: 0.549734794137216  
iteration: 84 HingeLoss: 4858.528988166421  
iteration: 85 HingeLoss: 2271.4121582287116  
iteration: 86 HingeLoss: 636.0467587350363  
iteration: 87 HingeLoss: 660.4870418246466  
iteration: 88 HingeLoss: 3197.743364823519  
iteration: 89 HingeLoss: 1951.1061266546058  
iteration: 90 HingeLoss: 1324.2317600891483  
iteration: 91 HingeLoss: 1227.6451068814479  
iteration: 92 HingeLoss: 326.80325051984863  
iteration: 93 HingeLoss: 38.392853434258036  
iteration: 94 HingeLoss: 4.510393309979927  
iteration: 95 HingeLoss: 0.5298811104401788  
iteration: 96 HingeLoss: 0.062250445117516  
iteration: 97 HingeLoss: 6814.483259023283

Output\_hinge\_train.txt

iteration: 98 HingeLoss: 519.7039343802084  
iteration: 99 HingeLoss: 1077.0309490027998  
[-0.02739671 -0.04342311 -0.00219694 ... 0.01446999 0.03605287  
0.00305192]

CROSS VALIDATION 9

iteration: 0 HingeLoss: 1674.1128313080771  
iteration: 1 HingeLoss: 1754.0929322516945  
iteration: 2 HingeLoss: 273.63019189849956  
iteration: 3 HingeLoss: 32.14608127684133  
iteration: 4 HingeLoss: 3.77652237235797  
iteration: 5 HingeLoss: 0.4436659357044244  
iteration: 6 HingeLoss: 0.05212188439428744  
iteration: 7 HingeLoss: 0.2230345771598504  
iteration: 8 HingeLoss: 3202.081663843469  
iteration: 9 HingeLoss: 1235.1104177241677  
iteration: 10 HingeLoss: 86.11812078079669  
iteration: 11 HingeLoss: 10.117158822354023  
iteration: 12 HingeLoss: 2806.840606495676  
iteration: 13 HingeLoss: 2232.1392085713824  
iteration: 14 HingeLoss: 931.8664349694373  
iteration: 15 HingeLoss: 2400.25827752967  
iteration: 16 HingeLoss: 328.13123644205393  
iteration: 17 HingeLoss: 38.54886525113219  
iteration: 18 HingeLoss: 4.528721581836878  
iteration: 19 HingeLoss: 0.532034316242103  
iteration: 20 HingeLoss: 5307.815808951504  
iteration: 21 HingeLoss: 1057.968195682693  
iteration: 22 HingeLoss: 776.7901018741331  
iteration: 23 HingeLoss: 3031.5294056247394  
iteration: 24 HingeLoss: 1994.563103842884  
iteration: 25 HingeLoss: 1130.4519122804031  
iteration: 26 HingeLoss: 3998.1831392999716  
iteration: 27 HingeLoss: 212.970991367149  
iteration: 28 HingeLoss: 25.019836994586356  
iteration: 29 HingeLoss: 2.9393310291564543  
iteration: 30 HingeLoss: 0.3453126773300459  
iteration: 31 HingeLoss: 0.628586651500262  
iteration: 32 HingeLoss: 3013.545350550557  
iteration: 33 HingeLoss: 1480.9828296516948  
iteration: 34 HingeLoss: 1080.4432623882708  
iteration: 35 HingeLoss: 2366.5937038304287  
iteration: 36 HingeLoss: 2108.2344443376896  
iteration: 37 HingeLoss: 1472.9636474998297  
iteration: 38 HingeLoss: 3849.4108816994303  
iteration: 39 HingeLoss: 3978.856977954592  
iteration: 40 HingeLoss: 1725.5435865800598  
iteration: 41 HingeLoss: 556.4256022132253  
iteration: 42 HingeLoss: 1949.0366400760986  
iteration: 43 HingeLoss: 1904.3756064021525  
iteration: 44 HingeLoss: 1327.8583767238547  
iteration: 45 HingeLoss: 1266.2708570329387  
iteration: 46 HingeLoss: 1559.1900978905119

Output\_hinge\_train.txt

iteration: 47 HingeLoss: 170.81685836737455  
iteration: 48 HingeLoss: 4530.892785812427  
iteration: 49 HingeLoss: 1426.7442760593378  
iteration: 50 HingeLoss: 1384.2023974725746  
iteration: 51 HingeLoss: 7138.144588207997  
iteration: 52 HingeLoss: 2089.4091247244346  
iteration: 53 HingeLoss: 862.0028804670386  
iteration: 54 HingeLoss: 1393.5034667385207  
iteration: 55 HingeLoss: 1949.5950359389358  
iteration: 56 HingeLoss: 994.2435976888717  
iteration: 57 HingeLoss: 3306.725955226593  
iteration: 58 HingeLoss: 737.8314631047958  
iteration: 59 HingeLoss: 3413.383223931465  
iteration: 60 HingeLoss: 734.4317751699309  
iteration: 61 HingeLoss: 2106.425133039802  
iteration: 62 HingeLoss: 1193.2561825154291  
iteration: 63 HingeLoss: 3375.1409612140715  
iteration: 64 HingeLoss: 5466.042371285473  
iteration: 65 HingeLoss: 1667.3229584627525  
iteration: 66 HingeLoss: 237.71216986388518  
iteration: 67 HingeLoss: 1533.2661525211852  
iteration: 68 HingeLoss: 2834.4388247126453  
iteration: 69 HingeLoss: 639.5609561420388  
iteration: 70 HingeLoss: 2044.2582212067596  
iteration: 71 HingeLoss: 4786.7625088024015  
iteration: 72 HingeLoss: 1024.414798062797  
iteration: 73 HingeLoss: 140.8081035650231  
iteration: 74 HingeLoss: 16.54213926553165  
iteration: 75 HingeLoss: 1.9433709037483031  
iteration: 76 HingeLoss: 9808.35712460642  
iteration: 77 HingeLoss: 1248.4072469331406  
iteration: 78 HingeLoss: 563.0704801967631  
iteration: 79 HingeLoss: 4450.548628791036  
iteration: 80 HingeLoss: 2087.343226362941  
iteration: 81 HingeLoss: 764.6432181736192  
iteration: 82 HingeLoss: 89.83030296712465  
iteration: 83 HingeLoss: 10.55326607151463  
iteration: 84 HingeLoss: 1.2397979423150836  
iteration: 85 HingeLoss: 0.15578175187550583  
iteration: 86 HingeLoss: 6718.770600070042  
iteration: 87 HingeLoss: 1293.8225302869562  
iteration: 88 HingeLoss: 677.8428135111212  
iteration: 89 HingeLoss: 1276.3734507524732  
iteration: 90 HingeLoss: 1411.6289935829882  
iteration: 91 HingeLoss: 532.0443622785435  
iteration: 92 HingeLoss: 1375.2610244398124  
iteration: 93 HingeLoss: 2578.312245016803  
iteration: 94 HingeLoss: 1667.0478183300231  
iteration: 95 HingeLoss: 336.044806375321  
iteration: 96 HingeLoss: 2814.786237185691  
iteration: 97 HingeLoss: 659.0833078659023  
iteration: 98 HingeLoss: 2941.7685216388

Output\_hinge\_train.txt

iteration: 99 HingeLoss: 3308.7815727892694  
[-0.14190029 -0.08532771 -0.01956561 ... 0.02935598 0.02008061  
0.0107686 ]

CROSS VALIDATION 10

iteration: 0 HingeLoss: 2344.9783640244623  
iteration: 1 HingeLoss: 1636.2836774057394  
iteration: 2 HingeLoss: 64.25858360144838  
iteration: 3 HingeLoss: 7.549099888630345  
iteration: 4 HingeLoss: 0.8868684296246171  
iteration: 5 HingeLoss: 0.2954102564258647  
iteration: 6 HingeLoss: 4086.5465966600286  
iteration: 7 HingeLoss: 243.8574711396184  
iteration: 8 HingeLoss: 272.96446620493424  
iteration: 9 HingeLoss: 32.067871806954436  
iteration: 10 HingeLoss: 3.767334322025664  
iteration: 11 HingeLoss: 0.44258652333874654  
iteration: 12 HingeLoss: 5393.236512264126  
iteration: 13 HingeLoss: 4143.095875798351  
iteration: 14 HingeLoss: 2204.39453055285  
iteration: 15 HingeLoss: 2021.7846433056882  
iteration: 16 HingeLoss: 249.27466991400217  
iteration: 17 HingeLoss: 1520.9347941587048  
iteration: 18 HingeLoss: 4790.976116165898  
iteration: 19 HingeLoss: 572.9068369542441  
iteration: 20 HingeLoss: 2220.674011768475  
iteration: 21 HingeLoss: 4983.677195302475  
iteration: 22 HingeLoss: 447.5842295264003  
iteration: 23 HingeLoss: 4639.950155363789  
iteration: 24 HingeLoss: 701.2919332417371  
iteration: 25 HingeLoss: 426.6234503052133  
iteration: 26 HingeLoss: 3255.0324203636715  
iteration: 27 HingeLoss: 549.5356396364132  
iteration: 28 HingeLoss: 1224.6714229136458  
iteration: 29 HingeLoss: 2387.2573447961304  
iteration: 30 HingeLoss: 2072.5679284737857  
iteration: 31 HingeLoss: 375.5958863823348  
iteration: 32 HingeLoss: 44.125013424587706  
iteration: 33 HingeLoss: 5.183807598302859  
iteration: 34 HingeLoss: 0.6089938366171394  
iteration: 35 HingeLoss: 0.071544610019686  
iteration: 36 HingeLoss: 12578.415472568737  
iteration: 37 HingeLoss: 6601.13919209273  
iteration: 38 HingeLoss: 521.4756763453214  
iteration: 39 HingeLoss: 61.26297452552574  
iteration: 40 HingeLoss: 7.197175665063774  
iteration: 41 HingeLoss: 0.8455243636954571  
iteration: 42 HingeLoss: 0.5969702306788612  
iteration: 43 HingeLoss: 3138.0010937222332  
iteration: 44 HingeLoss: 577.8214578111352  
iteration: 45 HingeLoss: 429.99785969969037  
iteration: 46 HingeLoss: 3663.626647894676  
iteration: 47 HingeLoss: 1787.2768535231432

# Output\_hinge\_train.txt

```

iteration: 48 HingeLoss: 2308.5392988462318
iteration: 49 HingeLoss: 2729.4835740266312
iteration: 50 HingeLoss: 1138.681909574331
iteration: 51 HingeLoss: 477.79676293401855
iteration: 52 HingeLoss: 2283.8707241759103
iteration: 53 HingeLoss: 1730.4595426620035
iteration: 54 HingeLoss: 657.8176656764163
iteration: 55 HingeLoss: 4555.736193357242
iteration: 56 HingeLoss: 2566.750617320687
iteration: 57 HingeLoss: 1065.843673963307
iteration: 58 HingeLoss: 1371.4110721639781
iteration: 59 HingeLoss: 1205.0955431434747
iteration: 60 HingeLoss: 2225.5988591819005
iteration: 61 HingeLoss: 1696.238458760452
iteration: 62 HingeLoss: 1146.0667624755995
iteration: 63 HingeLoss: 3829.051252718985
iteration: 64 HingeLoss: 2539.8159200382265
iteration: 65 HingeLoss: 1855.6832155851007
iteration: 66 HingeLoss: 5780.181547068135
iteration: 67 HingeLoss: 521.9035628716408
iteration: 68 HingeLoss: 2416.047082207841
iteration: 69 HingeLoss: 3705.722954150564
iteration: 70 HingeLoss: 322.4100465211666
iteration: 71 HingeLoss: 37.87673972682124
iteration: 72 HingeLoss: 4.449760259685865
iteration: 73 HingeLoss: 0.808172278164655
iteration: 74 HingeLoss: 4166.023786673074
iteration: 75 HingeLoss: 6722.557183600569
iteration: 76 HingeLoss: 520.5154478105992
iteration: 77 HingeLoss: 850.0976548525465
iteration: 78 HingeLoss: 2359.434994481395
iteration: 79 HingeLoss: 1853.3610776296232
iteration: 80 HingeLoss: 5806.621402017087
iteration: 81 HingeLoss: 697.2689752814558
iteration: 82 HingeLoss: 316.1111669708467
iteration: 83 HingeLoss: 5116.591744046418
iteration: 84 HingeLoss: 3640.3679594560717
iteration: 85 HingeLoss: 1501.5968892056503
iteration: 86 HingeLoss: 2531.1242285664907
iteration: 87 HingeLoss: 2826.1327990175123
iteration: 88 HingeLoss: 941.2744660507519
iteration: 89 HingeLoss: 10741.601250016296
iteration: 90 HingeLoss: 868.8826680876996
iteration: 91 HingeLoss: 292.9149954903135
iteration: 92 HingeLoss: 2456.8046355108663
iteration: 93 HingeLoss: 2686.8540560569236
iteration: 94 HingeLoss: 205.19967198827933
iteration: 95 HingeLoss: 24.106862214105607
iteration: 96 HingeLoss: 2.83207473081666
iteration: 97 HingeLoss: 0.3328494309348526
iteration: 98 HingeLoss: 3630.68697587931
iteration: 99 HingeLoss: 2078.315249218934

```



Output\_hinge\_train.txt

[-0.01180373 0.0145515 0.06268851 ... 0.03119047 -0.01444538  
0.01582785]

CROSS VALIDATION 11

iteration: 0 HingeLoss: 1815.0445697927985  
iteration: 1 HingeLoss: 1703.8366863972692  
iteration: 2 HingeLoss: 2926.0202770524725  
iteration: 3 HingeLoss: 1113.6733462999114  
iteration: 4 HingeLoss: 1404.180140531415  
iteration: 5 HingeLoss: 271.5410979675146  
iteration: 6 HingeLoss: 1007.0217030012917  
iteration: 7 HingeLoss: 2741.975610083359  
iteration: 8 HingeLoss: 613.065966298318  
iteration: 9 HingeLoss: 1873.465694336296  
iteration: 10 HingeLoss: 677.7392010452423  
iteration: 11 HingeLoss: 4624.273084579048  
iteration: 12 HingeLoss: 1680.2714689943787  
iteration: 13 HingeLoss: 368.69545831712037  
iteration: 14 HingeLoss: 3151.829541087282  
iteration: 15 HingeLoss: 1293.8513174835052  
iteration: 16 HingeLoss: 1832.3875835524616  
iteration: 17 HingeLoss: 2303.4071407576043  
iteration: 18 HingeLoss: 2924.2997024032748  
iteration: 19 HingeLoss: 2442.481556303427  
iteration: 20 HingeLoss: 1652.1274570809824  
iteration: 21 HingeLoss: 760.9508826820088  
iteration: 22 HingeLoss: 1018.4927698854522  
iteration: 23 HingeLoss: 477.25734973930935  
iteration: 24 HingeLoss: 1771.6722267623563  
iteration: 25 HingeLoss: 1557.994805469655  
iteration: 26 HingeLoss: 1746.618647310416  
iteration: 27 HingeLoss: 2178.063659273249  
iteration: 28 HingeLoss: 225.80097244610897  
iteration: 29 HingeLoss: 4419.468357076807  
iteration: 30 HingeLoss: 974.605136950073  
iteration: 31 HingeLoss: 2065.8912838112274  
iteration: 32 HingeLoss: 2864.9839901426512  
iteration: 33 HingeLoss: 2283.78550367361  
iteration: 34 HingeLoss: 1626.6084414412564  
iteration: 35 HingeLoss: 759.5509974519034  
iteration: 36 HingeLoss: 1662.9124547827314  
iteration: 37 HingeLoss: 1122.5112543760583  
iteration: 38 HingeLoss: 574.7488961147724  
iteration: 39 HingeLoss: 1591.7479770010848  
iteration: 40 HingeLoss: 2077.631665983352  
iteration: 41 HingeLoss: 117.03305606031667  
iteration: 42 HingeLoss: 13.814147477130732  
iteration: 43 HingeLoss: 1854.1659459132009  
iteration: 44 HingeLoss: 2708.1212490151397  
iteration: 45 HingeLoss: 249.27285833957467  
iteration: 46 HingeLoss: 29.28458116663866  
iteration: 47 HingeLoss: 3.4403532731878546  
iteration: 48 HingeLoss: 0.4041727821539796

# Output\_hinge\_train.txt

```

iteration: 49 HingeLoss: 0.047482227801193766
iteration: 50 HingeLoss: 10368.719306092595
iteration: 51 HingeLoss: 2125.6080957407494
iteration: 52 HingeLoss: 1838.4565321920945
iteration: 53 HingeLoss: 799.2840696609334
iteration: 54 HingeLoss: 79.72470262686026
iteration: 55 HingeLoss: 9.366059909667111
iteration: 56 HingeLoss: 5152.362268229788
iteration: 57 HingeLoss: 2707.46758754421
iteration: 58 HingeLoss: 343.274577482087
iteration: 59 HingeLoss: 40.327905306976625
iteration: 60 HingeLoss: 4.737723248769683
iteration: 61 HingeLoss: 0.5577757005981352
iteration: 62 HingeLoss: 8269.139236606392
iteration: 63 HingeLoss: 1969.5891120593383
iteration: 64 HingeLoss: 496.8072614500077
iteration: 65 HingeLoss: 58.3649285727248
iteration: 66 HingeLoss: 6.856713159459428
iteration: 67 HingeLoss: 0.805526820657757
iteration: 68 HingeLoss: 0.09463330953312772
iteration: 69 HingeLoss: 7299.774525792771
iteration: 70 HingeLoss: 2574.2610282827586
iteration: 71 HingeLoss: 2630.7370650084326
iteration: 72 HingeLoss: 3263.9224288878813
iteration: 73 HingeLoss: 2025.6994936031692
iteration: 74 HingeLoss: 396.8657709390111
iteration: 75 HingeLoss: 1382.4927270423425
iteration: 76 HingeLoss: 2320.0970420414737
iteration: 77 HingeLoss: 812.1852934729375
iteration: 78 HingeLoss: 1582.1698064362824
iteration: 79 HingeLoss: 2449.2654864535284
iteration: 80 HingeLoss: 308.4995228567534
iteration: 81 HingeLoss: 2741.900352296958
iteration: 82 HingeLoss: 1124.5282041426124
iteration: 83 HingeLoss: 1480.3752401241595
iteration: 84 HingeLoss: 1445.95263071322
iteration: 85 HingeLoss: 392.15954670951
iteration: 86 HingeLoss: 3663.3613269268367
iteration: 87 HingeLoss: 3329.461359414997
iteration: 88 HingeLoss: 461.20604461668194
iteration: 89 HingeLoss: 2779.136773072727
iteration: 90 HingeLoss: 1453.5655883598365
iteration: 91 HingeLoss: 484.35275834978995
iteration: 92 HingeLoss: 56.90177326027749
iteration: 93 HingeLoss: 6.684821639491408
iteration: 94 HingeLoss: 0.78533300091384
iteration: 95 HingeLoss: 0.0922609391222681
iteration: 96 HingeLoss: 0.7314069197282447
iteration: 97 HingeLoss: 4494.382679214437
iteration: 98 HingeLoss: 6044.262637875127
iteration: 99 HingeLoss: 530.7803724345439
[-0.10625632 -0.00354293 -0.03383218 ... 0.01333173 0.00762751

```

0.00177902]

CROSS VALIDATION 12

iteration:	0	HingeLoss:	2577.019475664798
iteration:	1	HingeLoss:	475.8185428817443
iteration:	2	HingeLoss:	790.2575369711894
iteration:	3	HingeLoss:	5065.686075082672
iteration:	4	HingeLoss:	729.5781916909702
iteration:	5	HingeLoss:	1985.1995084085318
iteration:	6	HingeLoss:	1433.6069861211345
iteration:	7	HingeLoss:	389.74565728040176
iteration:	8	HingeLoss:	945.4505911528857
iteration:	9	HingeLoss:	2238.747298441765
iteration:	10	HingeLoss:	1447.6656469550867
iteration:	11	HingeLoss:	1569.9176288416952
iteration:	12	HingeLoss:	655.2351293817934
iteration:	13	HingeLoss:	208.44578221694215
iteration:	14	HingeLoss:	24.488215318893445
iteration:	15	HingeLoss:	2.8768761023927656
iteration:	16	HingeLoss:	0.3379754710884571
iteration:	17	HingeLoss:	0.8078399755215594
iteration:	18	HingeLoss:	1723.0573328799903
iteration:	19	HingeLoss:	578.1987073116225
iteration:	20	HingeLoss:	1179.5108560639505
iteration:	21	HingeLoss:	1539.851333345233
iteration:	22	HingeLoss:	1516.351141288301
iteration:	23	HingeLoss:	4468.029092859353
iteration:	24	HingeLoss:	242.49198827084905
iteration:	25	HingeLoss:	28.487964394035536
iteration:	26	HingeLoss:	3.346766716306386
iteration:	27	HingeLoss:	0.3931782312856773
iteration:	28	HingeLoss:	0.04619058771073943
iteration:	29	HingeLoss:	1.1758150387495594
iteration:	30	HingeLoss:	1700.9014536312102
iteration:	31	HingeLoss:	578.400098978653
iteration:	32	HingeLoss:	1182.9333221830543
iteration:	33	HingeLoss:	1540.4683348560616
iteration:	34	HingeLoss:	1516.3335808031088
iteration:	35	HingeLoss:	4467.987736930262
iteration:	36	HingeLoss:	242.491674620767
iteration:	37	HingeLoss:	28.487927546416632
iteration:	38	HingeLoss:	3.346762387447267
iteration:	39	HingeLoss:	0.3931777227312077
iteration:	40	HingeLoss:	0.046190527965748546
iteration:	41	HingeLoss:	1.1759531751726022
iteration:	42	HingeLoss:	1700.9013953940316
iteration:	43	HingeLoss:	578.4000995092506
iteration:	44	HingeLoss:	1182.9333311807186
iteration:	45	HingeLoss:	1540.4683364781506
iteration:	46	HingeLoss:	1516.3335807569435
iteration:	47	HingeLoss:	4467.987736821541
iteration:	48	HingeLoss:	242.4916746199423
iteration:	49	HingeLoss:	28.487927546319767

# Output\_hinge\_train.txt

```

iteration: 50 HingeLoss: 3.346762387435887
iteration: 51 HingeLoss: 0.3931777227298706
iteration: 52 HingeLoss: 0.0461905279655915
iteration: 53 HingeLoss: 1.175953175535761
iteration: 54 HingeLoss: 1700.9013953938784
iteration: 55 HingeLoss: 578.4000995092522
iteration: 56 HingeLoss: 1182.9333311807427
iteration: 57 HingeLoss: 1540.468336478155
iteration: 58 HingeLoss: 1516.3335807569435
iteration: 59 HingeLoss: 4467.98773682154
iteration: 60 HingeLoss: 242.4916746199423
iteration: 61 HingeLoss: 28.487927546319767
iteration: 62 HingeLoss: 3.346762387435887
iteration: 63 HingeLoss: 0.3931777227298705
iteration: 64 HingeLoss: 0.0461905279655915
iteration: 65 HingeLoss: 1.1759531755357604
iteration: 66 HingeLoss: 1700.9013953938784
iteration: 67 HingeLoss: 578.4000995092522
iteration: 68 HingeLoss: 1182.9333311807427
iteration: 69 HingeLoss: 1540.468336478155
iteration: 70 HingeLoss: 1516.3335807569435
iteration: 71 HingeLoss: 4467.98773682154
iteration: 72 HingeLoss: 242.4916746199423
iteration: 73 HingeLoss: 28.487927546319767
iteration: 74 HingeLoss: 3.346762387435887
iteration: 75 HingeLoss: 0.3931777227298705
iteration: 76 HingeLoss: 0.0461905279655915
iteration: 77 HingeLoss: 1.1759531755357604
iteration: 78 HingeLoss: 1700.9013953938784
iteration: 79 HingeLoss: 578.4000995092522
iteration: 80 HingeLoss: 1182.9333311807427
iteration: 81 HingeLoss: 1540.468336478155
iteration: 82 HingeLoss: 1516.3335807569435
iteration: 83 HingeLoss: 4467.98773682154
iteration: 84 HingeLoss: 242.4916746199423
iteration: 85 HingeLoss: 28.487927546319767
iteration: 86 HingeLoss: 3.346762387435887
iteration: 87 HingeLoss: 0.3931777227298705
iteration: 88 HingeLoss: 0.0461905279655915
iteration: 89 HingeLoss: 1.1759531755357604
iteration: 90 HingeLoss: 1700.9013953938784
iteration: 91 HingeLoss: 578.4000995092522
iteration: 92 HingeLoss: 1182.9333311807427
iteration: 93 HingeLoss: 1540.468336478155
iteration: 94 HingeLoss: 1516.3335807569435
iteration: 95 HingeLoss: 4467.98773682154
iteration: 96 HingeLoss: 242.4916746199423
iteration: 97 HingeLoss: 28.487927546319767
iteration: 98 HingeLoss: 3.346762387435887
iteration: 99 HingeLoss: 0.3931777227298705
[-0.00278127 -0.00042054 -0.00125586 ... 0.00203788 0.00128586
0.00014871]

```

## CROSS VALIDATION 13

iteration: 0 HingeLoss: 2442.1426385166005  
iteration: 1 HingeLoss: 176.28610554898694  
iteration: 2 HingeLoss: 20.710095759672782  
iteration: 3 HingeLoss: 2.4746708688072196  
iteration: 4 HingeLoss: 4696.482586834429  
iteration: 5 HingeLoss: 477.7652184272299  
iteration: 6 HingeLoss: 56.12786891772016  
iteration: 7 HingeLoss: 6.593903339417354  
iteration: 8 HingeLoss: 2078.121678721661  
iteration: 9 HingeLoss: 3459.255599321237  
iteration: 10 HingeLoss: 2321.556121753254  
iteration: 11 HingeLoss: 291.73479039396136  
iteration: 12 HingeLoss: 480.2623512027272  
iteration: 13 HingeLoss: 5195.776696280958  
iteration: 14 HingeLoss: 2517.2699335821308  
iteration: 15 HingeLoss: 1566.5394627183123  
iteration: 16 HingeLoss: 1781.516253537738  
iteration: 17 HingeLoss: 1063.0685389813448  
iteration: 18 HingeLoss: 4169.671682376622  
iteration: 19 HingeLoss: 2521.4844953994693  
iteration: 20 HingeLoss: 5282.724374828797  
iteration: 21 HingeLoss: 1137.1114091320958  
iteration: 22 HingeLoss: 2503.607978650271  
iteration: 23 HingeLoss: 2364.4859651043707  
iteration: 24 HingeLoss: 463.6397838211652  
iteration: 25 HingeLoss: 1723.3506593284003  
iteration: 26 HingeLoss: 1157.088099676072  
iteration: 27 HingeLoss: 1574.394942350902  
iteration: 28 HingeLoss: 1166.1941859755061  
iteration: 29 HingeLoss: 1723.9157021928454  
iteration: 30 HingeLoss: 491.29363483432434  
iteration: 31 HingeLoss: 2520.32595869139  
iteration: 32 HingeLoss: 1118.1345239138632  
iteration: 33 HingeLoss: 1347.934204356075  
iteration: 34 HingeLoss: 1693.7636036127246  
iteration: 35 HingeLoss: 3735.832683153435  
iteration: 36 HingeLoss: 676.779805036658  
iteration: 37 HingeLoss: 2551.6609937414655  
iteration: 38 HingeLoss: 1672.0587105272343  
iteration: 39 HingeLoss: 429.9953750708185  
iteration: 40 HingeLoss: 2401.285432317053  
iteration: 41 HingeLoss: 4005.7893102181715  
iteration: 42 HingeLoss: 877.3644896443999  
iteration: 43 HingeLoss: 3275.53579414886  
iteration: 44 HingeLoss: 1339.8886781451781  
iteration: 45 HingeLoss: 508.6791963967762  
iteration: 46 HingeLoss: 4581.910438712379  
iteration: 47 HingeLoss: 283.8961470651137  
iteration: 48 HingeLoss: 33.352125927399484  
iteration: 49 HingeLoss: 3.9182085258169574  
iteration: 50 HingeLoss: 0.46031122829181936

# Output\_hinge\_train.txt

```

iteration: 51 HingeLoss: 0.6590115348091622
iteration: 52 HingeLoss: 3518.367489391782
iteration: 53 HingeLoss: 722.6547977409097
iteration: 54 HingeLoss: 113.46082548172045
iteration: 55 HingeLoss: 13.329380403408972
iteration: 56 HingeLoss: 1.565935918273464
iteration: 57 HingeLoss: 10229.743413025702
iteration: 58 HingeLoss: 6720.678207862801
iteration: 59 HingeLoss: 1222.7653185652553
iteration: 60 HingeLoss: 156.2372912807748
iteration: 61 HingeLoss: 18.35476059545482
iteration: 62 HingeLoss: 2.1563176995370563
iteration: 63 HingeLoss: 0.2533242532451325
iteration: 64 HingeLoss: 0.029760539133904758
iteration: 65 HingeLoss: 5935.945331417827
iteration: 66 HingeLoss: 1882.3264003425122
iteration: 67 HingeLoss: 1874.5115841379834
iteration: 68 HingeLoss: 1532.2554267860128
iteration: 69 HingeLoss: 2419.4979651603976
iteration: 70 HingeLoss: 1727.3826400817059
iteration: 71 HingeLoss: 2028.8739308580166
iteration: 72 HingeLoss: 2047.1457817090618
iteration: 73 HingeLoss: 4075.6143709517446
iteration: 74 HingeLoss: 557.083847136507
iteration: 75 HingeLoss: 2530.6179780160032
iteration: 76 HingeLoss: 1990.60294585371
iteration: 77 HingeLoss: 2554.613277096756
iteration: 78 HingeLoss: 2045.7460628443068
iteration: 79 HingeLoss: 1867.552129780021
iteration: 80 HingeLoss: 3182.9367309591403
iteration: 81 HingeLoss: 485.6449205318296
iteration: 82 HingeLoss: 1972.227787578582
iteration: 83 HingeLoss: 3949.25146745755
iteration: 84 HingeLoss: 718.8072306775698
iteration: 85 HingeLoss: 4252.229921037709
iteration: 86 HingeLoss: 1933.095548098969
iteration: 87 HingeLoss: 2613.265476174468
iteration: 88 HingeLoss: 1030.5415537922822
iteration: 89 HingeLoss: 2476.3538417496097
iteration: 90 HingeLoss: 598.2826635277713
iteration: 91 HingeLoss: 200.30467190183344
iteration: 92 HingeLoss: 2600.470717725589
iteration: 93 HingeLoss: 1485.6508507751278
iteration: 94 HingeLoss: 1141.37191450247
iteration: 95 HingeLoss: 3363.846409476812
iteration: 96 HingeLoss: 2264.169921508168
iteration: 97 HingeLoss: 1239.9223746445348
iteration: 98 HingeLoss: 1849.2157752672756
iteration: 99 HingeLoss: 1287.9372386676414
[-0.08614083 -0.03036107 -0.01469004 ... 0.06418226 -0.03786401
0.01135741]

```

CROSS VALIDATION 14

Output\_hinge\_train.txt

iteration: 0 HingeLoss: 1647.0505450641317  
iteration: 1 HingeLoss: 1894.9081178677511  
iteration: 2 HingeLoss: 3675.9388037087665  
iteration: 3 HingeLoss: 647.103444389444  
iteration: 4 HingeLoss: 1516.4016492367546  
iteration: 5 HingeLoss: 2868.8247844575376  
iteration: 6 HingeLoss: 1854.0261198845658  
iteration: 7 HingeLoss: 2699.330125293851  
iteration: 8 HingeLoss: 2381.993430459323  
iteration: 9 HingeLoss: 2171.5748875139325  
iteration: 10 HingeLoss: 692.4788611672799  
iteration: 11 HingeLoss: 980.9441745433456  
iteration: 12 HingeLoss: 2554.3010639565  
iteration: 13 HingeLoss: 2163.848748251878  
iteration: 14 HingeLoss: 1407.4652002372536  
iteration: 15 HingeLoss: 2126.167710884357  
iteration: 16 HingeLoss: 2132.1905210805603  
iteration: 17 HingeLoss: 384.7793805890669  
iteration: 18 HingeLoss: 45.203890536527595  
iteration: 19 HingeLoss: 5.310554106381938  
iteration: 20 HingeLoss: 0.6238840193195558  
iteration: 21 HingeLoss: 0.07329390902816842  
iteration: 22 HingeLoss: 0.6472334666722516  
iteration: 23 HingeLoss: 4445.873219260252  
iteration: 24 HingeLoss: 6825.171525091902  
iteration: 25 HingeLoss: 281.66381281068016  
iteration: 26 HingeLoss: 2469.562281192797  
iteration: 27 HingeLoss: 1743.6513794869597  
iteration: 28 HingeLoss: 165.42755087478244  
iteration: 29 HingeLoss: 2012.8849821454683  
iteration: 30 HingeLoss: 3421.177706882825  
iteration: 31 HingeLoss: 158.19157620693903  
iteration: 32 HingeLoss: 18.58435003380848  
iteration: 33 HingeLoss: 2.183289872068216  
iteration: 34 HingeLoss: 0.2564929446983085  
iteration: 35 HingeLoss: 0.030132797079156698  
iteration: 36 HingeLoss: 10664.111950415176  
iteration: 37 HingeLoss: 3747.201993332977  
iteration: 38 HingeLoss: 1681.2722485783888  
iteration: 39 HingeLoss: 231.0722561279449  
iteration: 40 HingeLoss: 27.14637399760104  
iteration: 41 HingeLoss: 3.189156645484925  
iteration: 42 HingeLoss: 0.3746621965180124  
iteration: 43 HingeLoss: 0.5667680493585195  
iteration: 44 HingeLoss: 3771.1610502345093  
iteration: 45 HingeLoss: 270.03340141711044  
iteration: 46 HingeLoss: 31.72353024784747  
iteration: 47 HingeLoss: 3.7268810676927004  
iteration: 48 HingeLoss: 0.43783407408350317  
iteration: 49 HingeLoss: 0.05143675715609522  
iteration: 50 HingeLoss: 0.05673475860605051  
iteration: 51 HingeLoss: 3758.7475086039017

# Output\_hinge\_train.txt

```

iteration: 52 HingeLoss: 2080.2194459109496
iteration: 53 HingeLoss: 134.73822289098752
iteration: 54 HingeLoss: 15.829049543471074
iteration: 55 HingeLoss: 1.8595971066976387
iteration: 56 HingeLoss: 0.21846551113137264
iteration: 57 HingeLoss: 0.02566533330364667
iteration: 58 HingeLoss: 4237.972587041964
iteration: 59 HingeLoss: 3633.8316554143958
iteration: 60 HingeLoss: 300.9435639583181
iteration: 61 HingeLoss: 35.354856858540394
iteration: 62 HingeLoss: 4.153489401956462
iteration: 63 HingeLoss: 0.48795203106577856
iteration: 64 HingeLoss: 0.26174740651697703
iteration: 65 HingeLoss: 6290.856935056281
iteration: 66 HingeLoss: 1312.0204423070397
iteration: 67 HingeLoss: 420.69959294393135
iteration: 68 HingeLoss: 1374.0738004172654
iteration: 69 HingeLoss: 2944.4962774228766
iteration: 70 HingeLoss: 1272.1950481077479
iteration: 71 HingeLoss: 2968.013417272516
iteration: 72 HingeLoss: 2051.538651132546
iteration: 73 HingeLoss: 2618.027610555229
iteration: 74 HingeLoss: 2967.845212376143
iteration: 75 HingeLoss: 4640.36387897752
iteration: 76 HingeLoss: 578.6827699576867
iteration: 77 HingeLoss: 541.4925043434646
iteration: 78 HingeLoss: 1997.9261922921505
iteration: 79 HingeLoss: 893.802924453974
iteration: 80 HingeLoss: 2072.0482508830155
iteration: 81 HingeLoss: 2829.4083023033086
iteration: 82 HingeLoss: 1225.8959288840497
iteration: 83 HingeLoss: 1887.1586079254416
iteration: 84 HingeLoss: 891.6695249015825
iteration: 85 HingeLoss: 605.1322399727842
iteration: 86 HingeLoss: 1845.8353588480804
iteration: 87 HingeLoss: 1248.649911214342
iteration: 88 HingeLoss: 695.8335971174292
iteration: 89 HingeLoss: 4600.124925735662
iteration: 90 HingeLoss: 5754.695628859741
iteration: 91 HingeLoss: 379.1684734937005
iteration: 92 HingeLoss: 44.96634984235411
iteration: 93 HingeLoss: 3403.004278864328
iteration: 94 HingeLoss: 3586.115309477161
iteration: 95 HingeLoss: 4100.596814510285
iteration: 96 HingeLoss: 1743.4930007178873
iteration: 97 HingeLoss: 877.6565145796867
iteration: 98 HingeLoss: 1647.3061946479288
iteration: 99 HingeLoss: 2810.638073220647
[-0.07570096 0.01138828 0.04570176 ... 0.03515614 0.06044391
 0.00034354]
CROSS VALIDATION 15
iteration: 0 HingeLoss: 1888.094292274146

```



Output\_hinge\_train.txt

iteration: 1 HingeLoss: 1710.026232769303  
iteration: 2 HingeLoss: 2911.258676120249  
iteration: 3 HingeLoss: 1202.0937585574984  
iteration: 4 HingeLoss: 1705.182172942566  
iteration: 5 HingeLoss: 2604.406268031879  
iteration: 6 HingeLoss: 2096.8085548779313  
iteration: 7 HingeLoss: 1989.2676983930014  
iteration: 8 HingeLoss: 1236.5165956476108  
iteration: 9 HingeLoss: 6329.278068541188  
iteration: 10 HingeLoss: 509.3379650732492  
iteration: 11 HingeLoss: 59.83703592438047  
iteration: 12 HingeLoss: 7.029656365200819  
iteration: 13 HingeLoss: 0.8258441924706688  
iteration: 14 HingeLoss: 0.09702019484391222  
iteration: 15 HingeLoss: 0.011397934735594823  
iteration: 16 HingeLoss: 2928.745465642778  
iteration: 17 HingeLoss: 485.224789450275  
iteration: 18 HingeLoss: 1290.1444958896564  
iteration: 19 HingeLoss: 2358.2672707456377  
iteration: 20 HingeLoss: 1339.690989570632  
iteration: 21 HingeLoss: 4639.6647603869405  
iteration: 22 HingeLoss: 1625.7575221378079  
iteration: 23 HingeLoss: 776.305905004304  
iteration: 24 HingeLoss: 4709.771609427242  
iteration: 25 HingeLoss: 1370.3620223211558  
iteration: 26 HingeLoss: 359.94905328472544  
iteration: 27 HingeLoss: 2520.9717950591685  
iteration: 28 HingeLoss: 1569.9004712801618  
iteration: 29 HingeLoss: 2594.101503483228  
iteration: 30 HingeLoss: 1841.8184795604427  
iteration: 31 HingeLoss: 2757.3664731107356  
iteration: 32 HingeLoss: 1964.3582724288983  
iteration: 33 HingeLoss: 2665.379766032838  
iteration: 34 HingeLoss: 1891.5576137485077  
iteration: 35 HingeLoss: 3639.755556853701  
iteration: 36 HingeLoss: 273.3980600141932  
iteration: 37 HingeLoss: 236.52162492620835  
iteration: 38 HingeLoss: 27.786565970135428  
iteration: 39 HingeLoss: 3.2643664132341845  
iteration: 40 HingeLoss: 9781.16599579961  
iteration: 41 HingeLoss: 6233.321259712079  
iteration: 42 HingeLoss: 925.3798924283374  
iteration: 43 HingeLoss: 107.81640955900387  
iteration: 44 HingeLoss: 12.66627429017988  
iteration: 45 HingeLoss: 1.4880341967450874  
iteration: 46 HingeLoss: 0.21041241197492128  
iteration: 47 HingeLoss: 4255.838088692652  
iteration: 48 HingeLoss: 200.2929376216811  
iteration: 49 HingeLoss: 23.53041894716145  
iteration: 50 HingeLoss: 2.7643541624754704  
iteration: 51 HingeLoss: 6861.949756960412  
iteration: 52 HingeLoss: 417.6826534942633

# Output\_hinge\_train.txt

```

iteration: 53 HingeLoss: 836.014538515589
iteration: 54 HingeLoss: 1087.7224114034666
iteration: 55 HingeLoss: 4806.587410026032
iteration: 56 HingeLoss: 3696.2954786501973
iteration: 57 HingeLoss: 2711.469827758867
iteration: 58 HingeLoss: 439.93218066621307
iteration: 59 HingeLoss: 51.68324276598835
iteration: 60 HingeLoss: 6.071748556250211
iteration: 61 HingeLoss: 0.7133091609063538
iteration: 62 HingeLoss: 0.08379957673134567
iteration: 63 HingeLoss: 10600.02878976124
iteration: 64 HingeLoss: 3708.590844748891
iteration: 65 HingeLoss: 240.96421809658398
iteration: 66 HingeLoss: 28.3084819186058
iteration: 67 HingeLoss: 3.325681110939152
iteration: 68 HingeLoss: 0.39070109387915186
iteration: 69 HingeLoss: 0.21015474222562103
iteration: 70 HingeLoss: 6662.250466745355
iteration: 71 HingeLoss: 1328.4333895388809
iteration: 72 HingeLoss: 1838.5247710204717
iteration: 73 HingeLoss: 2326.2173746296394
iteration: 74 HingeLoss: 451.38863672096454
iteration: 75 HingeLoss: 96.976143943419
iteration: 76 HingeLoss: 4222.941113345886
iteration: 77 HingeLoss: 1796.4893061101147
iteration: 78 HingeLoss: 1489.0283107219352
iteration: 79 HingeLoss: 1222.4391036502147
iteration: 80 HingeLoss: 937.827930100358
iteration: 81 HingeLoss: 3265.8526030459857
iteration: 82 HingeLoss: 999.275866621748
iteration: 83 HingeLoss: 4031.377760403944
iteration: 84 HingeLoss: 184.56054321074146
iteration: 85 HingeLoss: 21.682176887670476
iteration: 86 HingeLoss: 2.5472226425527262
iteration: 87 HingeLoss: 0.2992477749973011
iteration: 88 HingeLoss: 0.10679309222847685
iteration: 89 HingeLoss: 4139.277607324187
iteration: 90 HingeLoss: 666.4168516730649
iteration: 91 HingeLoss: 1104.2863673742745
iteration: 92 HingeLoss: 3486.1837575853424
iteration: 93 HingeLoss: 1695.3590936937676
iteration: 94 HingeLoss: 1019.9154455911307
iteration: 95 HingeLoss: 2281.085373183021
iteration: 96 HingeLoss: 1781.075301095707
iteration: 97 HingeLoss: 1830.8734615568342
iteration: 98 HingeLoss: 869.339738241687
iteration: 99 HingeLoss: 1465.439197781346
[ 0.00168106 -0.02401364 -0.05911191 ... 0.04793845 0.00407809
 0.02101857]
CROSS VALIDATION 16
iteration: 0 HingeLoss: 1888.094292274146
iteration: 1 HingeLoss: 1710.026232769303

```

Output\_hinge\_train.txt

```

iteration: 2 HingeLoss: 593.5152328617542
iteration: 3 HingeLoss: 1835.105306751148
iteration: 4 HingeLoss: 1609.7276606044295
iteration: 5 HingeLoss: 357.33652603136244
iteration: 6 HingeLoss: 4265.0645610067095
iteration: 7 HingeLoss: 3292.8069988033976
iteration: 8 HingeLoss: 1955.3228508476695
iteration: 9 HingeLoss: 1884.2109993428269
iteration: 10 HingeLoss: 5713.475765215172
iteration: 11 HingeLoss: 2064.225729565931
iteration: 12 HingeLoss: 1555.7167479407422
iteration: 13 HingeLoss: 798.7047548235872
iteration: 14 HingeLoss: 1608.9081649996751
iteration: 15 HingeLoss: 1599.554698040689
iteration: 16 HingeLoss: 2623.183822103317
iteration: 17 HingeLoss: 723.9964463380308
iteration: 18 HingeLoss: 1941.1365243888633
iteration: 19 HingeLoss: 2273.544443900796
iteration: 20 HingeLoss: 499.46372621257177
iteration: 21 HingeLoss: 240.16194939130992
iteration: 22 HingeLoss: 197.30808862998768
iteration: 23 HingeLoss: 4129.881069731238
iteration: 24 HingeLoss: 1646.580211124708
iteration: 25 HingeLoss: 820.6920057039302
iteration: 26 HingeLoss: 4625.078973872034
iteration: 27 HingeLoss: 2047.7044053622565
iteration: 28 HingeLoss: 2446.9793719151794
iteration: 29 HingeLoss: 298.63907549781345
iteration: 30 HingeLoss: 2372.463943676022
iteration: 31 HingeLoss: 2023.1483337568811
iteration: 32 HingeLoss: 805.0096072492952
iteration: 33 HingeLoss: 3565.360287509045
iteration: 34 HingeLoss: 2481.5996127290873
iteration: 35 HingeLoss: 544.8405193501771
iteration: 36 HingeLoss: 2666.777812706463
iteration: 37 HingeLoss: 1009.9023778170977
iteration: 38 HingeLoss: 4015.3882735749285
iteration: 39 HingeLoss: 6359.11630778662
iteration: 40 HingeLoss: 295.2158644444595
iteration: 41 HingeLoss: 34.68196658709651
iteration: 42 HingeLoss: 4.074438237294579
iteration: 43 HingeLoss: 0.4786650984118245
iteration: 44 HingeLoss: 0.2150050976304585
iteration: 45 HingeLoss: 6723.1512420067265
iteration: 46 HingeLoss: 1013.3319622621318
iteration: 47 HingeLoss: 2116.9857932774394
iteration: 48 HingeLoss: 2731.9460256890056
iteration: 49 HingeLoss: 832.2902374718878
iteration: 50 HingeLoss: 2276.1776659565626
iteration: 51 HingeLoss: 1495.2602163973957
iteration: 52 HingeLoss: 1476.574542697535
iteration: 53 HingeLoss: 2291.841095226348

```

# Output\_hinge\_train.txt

```

iteration: 54 HingeLoss: 3233.091557402539
iteration: 55 HingeLoss: 298.48147604155474
iteration: 56 HingeLoss: 35.06561071309909
iteration: 57 HingeLoss: 4.119508758096012
iteration: 58 HingeLoss: 0.4839599842386409
iteration: 59 HingeLoss: 0.05685563014860973
iteration: 60 HingeLoss: 5252.075867127805
iteration: 61 HingeLoss: 574.1888040929321
iteration: 62 HingeLoss: 67.4557139932515
iteration: 63 HingeLoss: 7.924698841050354
iteration: 64 HingeLoss: 0.9309938032473817
iteration: 65 HingeLoss: 0.271652320963386
iteration: 66 HingeLoss: 2472.9656446275017
iteration: 67 HingeLoss: 1420.6973740691656
iteration: 68 HingeLoss: 77.56725401318943
iteration: 69 HingeLoss: 9.112602796603369
iteration: 70 HingeLoss: 1.070548787437334
iteration: 71 HingeLoss: 0.12576809632377842
iteration: 72 HingeLoss: 0.12000093527641459
iteration: 73 HingeLoss: 3791.3756467097555
iteration: 74 HingeLoss: 3494.026804702138
iteration: 75 HingeLoss: 763.8442934595053
iteration: 76 HingeLoss: 2737.5953569487933
iteration: 77 HingeLoss: 3472.2315753303
iteration: 78 HingeLoss: 451.8860027688459
iteration: 79 HingeLoss: 208.4331617681663
iteration: 80 HingeLoss: 3912.216472946265
iteration: 81 HingeLoss: 3553.024619368186
iteration: 82 HingeLoss: 6458.658994183079
iteration: 83 HingeLoss: 674.8016108993062
iteration: 84 HingeLoss: 1480.9862181089038
iteration: 85 HingeLoss: 1733.0061556143407
iteration: 86 HingeLoss: 803.5879731402988
iteration: 87 HingeLoss: 319.29119781091424
iteration: 88 HingeLoss: 5670.962609544976
iteration: 89 HingeLoss: 2106.231719791909
iteration: 90 HingeLoss: 410.800603712513
iteration: 91 HingeLoss: 1684.7564873340882
iteration: 92 HingeLoss: 2323.2129917585244
iteration: 93 HingeLoss: 2332.340966095467
iteration: 94 HingeLoss: 4087.1681360835473
iteration: 95 HingeLoss: 993.9746365790666
iteration: 96 HingeLoss: 101.18945575053587
iteration: 97 HingeLoss: 11.887739603393904
iteration: 98 HingeLoss: 1.3965719237238954
iteration: 99 HingeLoss: 0.1640693019198557
[ 0.0004761 -0.00028318 0.00070618 ... 0.00192444 0.00035393
 -0.00019592]
CROSS VALIDATION 17
iteration: 0 HingeLoss: 1888.094292274146
iteration: 1 HingeLoss: 1695.9537818882693
iteration: 2 HingeLoss: 327.2534146422455

```

Output\_hinge\_train.txt

iteration: 3 HingeLoss: 38.44573872577534  
iteration: 4 HingeLoss: 4.516606275251302  
iteration: 5 HingeLoss: 0.5306110097440462  
iteration: 6 HingeLoss: 0.06233619370462636  
iteration: 7 HingeLoss: 8379.548161801815  
iteration: 8 HingeLoss: 1801.575626190725  
iteration: 9 HingeLoss: 2728.6569217435404  
iteration: 10 HingeLoss: 3836.15849545132  
iteration: 11 HingeLoss: 4830.921058232277  
iteration: 12 HingeLoss: 816.3882365518691  
iteration: 13 HingeLoss: 355.70047707353166  
iteration: 14 HingeLoss: 41.78770027855137  
iteration: 15 HingeLoss: 4.909219995814224  
iteration: 16 HingeLoss: 0.5767352787220119  
iteration: 17 HingeLoss: 0.0677548738916087  
iteration: 18 HingeLoss: 6212.205894503129  
iteration: 19 HingeLoss: 1520.552441754824  
iteration: 20 HingeLoss: 1811.7678022828347  
iteration: 21 HingeLoss: 1337.0189349753555  
iteration: 22 HingeLoss: 375.8229661613565  
iteration: 23 HingeLoss: 1181.2746142485776  
iteration: 24 HingeLoss: 2976.539136455922  
iteration: 25 HingeLoss: 292.3299360040211  
iteration: 26 HingeLoss: 2020.2572018361884  
iteration: 27 HingeLoss: 2801.621525585437  
iteration: 28 HingeLoss: 957.5004580083571  
iteration: 29 HingeLoss: 1277.301386548596  
iteration: 30 HingeLoss: 5506.874034008213  
iteration: 31 HingeLoss: 524.8935361203025  
iteration: 32 HingeLoss: 1429.0842137023328  
iteration: 33 HingeLoss: 3565.909737742046  
iteration: 34 HingeLoss: 253.13595636655953  
iteration: 35 HingeLoss: 29.73841801225229  
iteration: 36 HingeLoss: 3.49367003631366  
iteration: 37 HingeLoss: 0.4104364367199055  
iteration: 38 HingeLoss: 0.25934487647744753  
iteration: 39 HingeLoss: 4212.498015181837  
iteration: 40 HingeLoss: 1409.5161456845594  
iteration: 41 HingeLoss: 2553.316935645128  
iteration: 42 HingeLoss: 3468.9477272704994  
iteration: 43 HingeLoss: 501.1173869045384  
iteration: 44 HingeLoss: 58.871282210872025  
iteration: 45 HingeLoss: 6.916199596587475  
iteration: 46 HingeLoss: 0.8125152886682507  
iteration: 47 HingeLoss: 6760.494775448318  
iteration: 48 HingeLoss: 1974.0555495870558  
iteration: 49 HingeLoss: 2243.8609323461474  
iteration: 50 HingeLoss: 771.4447799643049  
iteration: 51 HingeLoss: 82.9217682275264  
iteration: 52 HingeLoss: 9.741651250422851  
iteration: 53 HingeLoss: 1.1444494143500732  
iteration: 54 HingeLoss: 10230.221078593087

# Output\_hinge\_train.txt

```

iteration: 55 HingeLoss: 3732.266730129663
iteration: 56 HingeLoss: 242.75486984010004
iteration: 57 HingeLoss: 28.51884772687501
iteration: 58 HingeLoss: 3.350394890963101
iteration: 59 HingeLoss: 0.39360446932831455
iteration: 60 HingeLoss: 0.12046746556354301
iteration: 61 HingeLoss: 6662.201412738057
iteration: 62 HingeLoss: 1362.2477331351824
iteration: 63 HingeLoss: 3365.447622086003
iteration: 64 HingeLoss: 2394.8749794523387
iteration: 65 HingeLoss: 874.0549965479083
iteration: 66 HingeLoss: 67.94733217776188
iteration: 67 HingeLoss: 7.982454156744123
iteration: 68 HingeLoss: 1.2063255734989073
iteration: 69 HingeLoss: 5383.320191720948
iteration: 70 HingeLoss: 755.2297672685644
iteration: 71 HingeLoss: 56.259672899547354
iteration: 72 HingeLoss: 1433.7428722252093
iteration: 73 HingeLoss: 1804.903652533542
iteration: 74 HingeLoss: 1386.7592528961923
iteration: 75 HingeLoss: 9220.161188443877
iteration: 76 HingeLoss: 643.2179145493224
iteration: 77 HingeLoss: 2465.0011078290436
iteration: 78 HingeLoss: 849.7294678517426
iteration: 79 HingeLoss: 1900.486819837775
iteration: 80 HingeLoss: 2197.590561720537
iteration: 81 HingeLoss: 693.7664180162483
iteration: 82 HingeLoss: 6655.921342401799
iteration: 83 HingeLoss: 3827.472824538576
iteration: 84 HingeLoss: 3019.0616756579793
iteration: 85 HingeLoss: 333.0420680147952
iteration: 86 HingeLoss: 4058.769647967596
iteration: 87 HingeLoss: 1995.9441257912554
iteration: 88 HingeLoss: 2875.3432908032623
iteration: 89 HingeLoss: 1994.1702822006755
iteration: 90 HingeLoss: 114.55390015992562
iteration: 91 HingeLoss: 13.457794841901467
iteration: 92 HingeLoss: 1.826091570847056
iteration: 93 HingeLoss: 3588.390034817172
iteration: 94 HingeLoss: 773.1139127775132
iteration: 95 HingeLoss: 1532.4208539070155
iteration: 96 HingeLoss: 5060.799891743269
iteration: 97 HingeLoss: 873.8400058664465
iteration: 98 HingeLoss: 3549.4840748660868
iteration: 99 HingeLoss: 1767.2497487745122
[-0.13830974 -0.06690328 0.00663731 ... 0.03218926 0.02009872
-0.00405407]
CROSS VALIDATION 18
iteration: 0 HingeLoss: 3189.1831853149315
iteration: 1 HingeLoss: 1117.4423464359986
iteration: 2 HingeLoss: 72.87465649652452
iteration: 3 HingeLoss: 8.5613163317451

```

Output\_hinge\_train.txt

```

iteration: 4 HingeLoss: 1.5078125823311421
iteration: 5 HingeLoss: 3562.1900784378577
iteration: 6 HingeLoss: 866.9951233243995
iteration: 7 HingeLoss: 606.7698658234326
iteration: 8 HingeLoss: 4449.591953249753
iteration: 9 HingeLoss: 1408.7986673112582
iteration: 10 HingeLoss: 2303.6774500121433
iteration: 11 HingeLoss: 1430.7752977876535
iteration: 12 HingeLoss: 682.6036047836101
iteration: 13 HingeLoss: 2384.483338168645
iteration: 14 HingeLoss: 2284.310879496227
iteration: 15 HingeLoss: 425.8917603207637
iteration: 16 HingeLoss: 2527.511850274596
iteration: 17 HingeLoss: 3867.829483527644
iteration: 18 HingeLoss: 675.0640949194449
iteration: 19 HingeLoss: 1527.3900823917256
iteration: 20 HingeLoss: 1604.2824333703911
iteration: 21 HingeLoss: 201.05645302483703
iteration: 22 HingeLoss: 23.620116754394164
iteration: 23 HingeLoss: 2.774891862945042
iteration: 24 HingeLoss: 0.3259943602779241
iteration: 25 HingeLoss: 0.03829782498991666
iteration: 26 HingeLoss: 7743.944246452239
iteration: 27 HingeLoss: 1118.8604360974527
iteration: 28 HingeLoss: 608.0473055685989
iteration: 29 HingeLoss: 3293.5629630929066
iteration: 30 HingeLoss: 1215.6446089841497
iteration: 31 HingeLoss: 1899.5401280143624
iteration: 32 HingeLoss: 658.7431650088972
iteration: 33 HingeLoss: 1417.6801069525636
iteration: 34 HingeLoss: 1326.1815268186585
iteration: 35 HingeLoss: 954.2442553338273
iteration: 36 HingeLoss: 1936.622795939708
iteration: 37 HingeLoss: 357.5829081462842
iteration: 38 HingeLoss: 2506.397321084734
iteration: 39 HingeLoss: 934.2623991245914
iteration: 40 HingeLoss: 136.49548019373722
iteration: 41 HingeLoss: 16.03549217206621
iteration: 42 HingeLoss: 1.8838499914826827
iteration: 43 HingeLoss: 0.283031226763377
iteration: 44 HingeLoss: 5348.659790064981
iteration: 45 HingeLoss: 1098.7294800351256
iteration: 46 HingeLoss: 2845.3852383973244
iteration: 47 HingeLoss: 152.9965357351949
iteration: 48 HingeLoss: 17.974036558959504
iteration: 49 HingeLoss: 2.1115902309185133
iteration: 50 HingeLoss: 0.2480696691967012
iteration: 51 HingeLoss: 0.5049820901956684
iteration: 52 HingeLoss: 2778.607195621158
iteration: 53 HingeLoss: 1355.866589061622
iteration: 54 HingeLoss: 88.47055715333127
iteration: 55 HingeLoss: 10.393523101841666

```

# Output\_hinge\_train.txt

```

iteration: 56 HingeLoss: 1.221031334540983
iteration: 57 HingeLoss: 0.14344678944012293
iteration: 58 HingeLoss: 0.3464953110505123
iteration: 59 HingeLoss: 2656.6978346158844
iteration: 60 HingeLoss: 452.6883683305822
iteration: 61 HingeLoss: 53.181839988014055
iteration: 62 HingeLoss: 6.247803792575725
iteration: 63 HingeLoss: 0.7339921341443103
iteration: 64 HingeLoss: 3873.1636968180487
iteration: 65 HingeLoss: 607.587922999468
iteration: 66 HingeLoss: 452.8850032103484
iteration: 67 HingeLoss: 1900.4291851672695
iteration: 68 HingeLoss: 1984.3547585370118
iteration: 69 HingeLoss: 564.1815149984011
iteration: 70 HingeLoss: 1435.5585779423484
iteration: 71 HingeLoss: 4239.553420163478
iteration: 72 HingeLoss: 556.0941363348579
iteration: 73 HingeLoss: 1405.0210527529562
iteration: 74 HingeLoss: 2245.9580755626266
iteration: 75 HingeLoss: 1106.970730783164
iteration: 76 HingeLoss: 1217.4362824921536
iteration: 77 HingeLoss: 2481.5058585348693
iteration: 78 HingeLoss: 1937.6165239006157
iteration: 79 HingeLoss: 2490.183217613061
iteration: 80 HingeLoss: 2999.815838873089
iteration: 81 HingeLoss: 2749.6904849007237
iteration: 82 HingeLoss: 548.8363143144059
iteration: 83 HingeLoss: 2792.920440722545
iteration: 84 HingeLoss: 1629.0100405987682
iteration: 85 HingeLoss: 808.6841079370317
iteration: 86 HingeLoss: 313.5474717895008
iteration: 87 HingeLoss: 37.168335948210085
iteration: 88 HingeLoss: 1614.1859827827243
iteration: 89 HingeLoss: 2392.182028325317
iteration: 90 HingeLoss: 1106.5430874572462
iteration: 91 HingeLoss: 1754.187745840913
iteration: 92 HingeLoss: 1936.768170377359
iteration: 93 HingeLoss: 1002.8236051802592
iteration: 94 HingeLoss: 1928.9969057779058
iteration: 95 HingeLoss: 260.47048231767917
iteration: 96 HingeLoss: 2262.063577855274
iteration: 97 HingeLoss: 4176.405061651032
iteration: 98 HingeLoss: 244.46125795388878
iteration: 99 HingeLoss: 28.719314241973734
[-0.00925877 -0.01467906 -0.00278394 ... 0.01822081 0.00315995
0.00549214]
CROSS VALIDATION 19
iteration: 0 HingeLoss: 2756.127847864501
iteration: 1 HingeLoss: 739.8184831042497
iteration: 2 HingeLoss: 60.734192039087986
iteration: 3 HingeLoss: 7.135054286319486
iteration: 4 HingeLoss: 0.8382263426829074

```



Output\_hinge\_train.txt

iteration: 5 HingeLoss: 0.24171316327195214  
iteration: 6 HingeLoss: 4933.985801139774  
iteration: 7 HingeLoss: 2594.2043117936723  
iteration: 8 HingeLoss: 1216.2910300227295  
iteration: 9 HingeLoss: 702.1083745319986  
iteration: 10 HingeLoss: 264.6404961768997  
iteration: 11 HingeLoss: 446.9891762878127  
iteration: 12 HingeLoss: 3501.9954810106738  
iteration: 13 HingeLoss: 1182.5351323847924  
iteration: 14 HingeLoss: 3491.550672144799  
iteration: 15 HingeLoss: 320.5482659767721  
iteration: 16 HingeLoss: 3668.446793421955  
iteration: 17 HingeLoss: 2338.6267519314224  
iteration: 18 HingeLoss: 605.7666167485254  
iteration: 19 HingeLoss: 194.60644112352816  
iteration: 20 HingeLoss: 3084.5084274195033  
iteration: 21 HingeLoss: 1520.7590349602244  
iteration: 22 HingeLoss: 1919.5164900415084  
iteration: 23 HingeLoss: 2354.46343157808  
iteration: 24 HingeLoss: 389.44000874196865  
iteration: 25 HingeLoss: 1473.1925672571188  
iteration: 26 HingeLoss: 2359.658151833507  
iteration: 27 HingeLoss: 1437.5257757062593  
iteration: 28 HingeLoss: 536.4624092236122  
iteration: 29 HingeLoss: 2753.3100406123385  
iteration: 30 HingeLoss: 614.7024398469741  
iteration: 31 HingeLoss: 1960.9172028936193  
iteration: 32 HingeLoss: 368.76254007709184  
iteration: 33 HingeLoss: 1869.2540430487243  
iteration: 34 HingeLoss: 2059.941959890534  
iteration: 35 HingeLoss: 1652.3028466651515  
iteration: 36 HingeLoss: 4751.179557292848  
iteration: 37 HingeLoss: 1211.5371739727934  
iteration: 38 HingeLoss: 1578.5214095173053  
iteration: 39 HingeLoss: 3146.288409299511  
iteration: 40 HingeLoss: 2672.6854351754064  
iteration: 41 HingeLoss: 998.8726861342345  
iteration: 42 HingeLoss: 2418.4651404460387  
iteration: 43 HingeLoss: 1267.9361914971712  
iteration: 44 HingeLoss: 286.83648426901414  
iteration: 45 HingeLoss: 3345.7621585589145  
iteration: 46 HingeLoss: 1201.7541191231774  
iteration: 47 HingeLoss: 1960.8852610694576  
iteration: 48 HingeLoss: 1902.7892657749521  
iteration: 49 HingeLoss: 1446.605285398918  
iteration: 50 HingeLoss: 600.9990256729777  
iteration: 51 HingeLoss: 937.6074690059098  
iteration: 52 HingeLoss: 2495.646069151484  
iteration: 53 HingeLoss: 3697.3736482604218  
iteration: 54 HingeLoss: 724.3828999602716  
iteration: 55 HingeLoss: 783.4880657462248  
iteration: 56 HingeLoss: 1211.885385246743

# Output\_hinge\_train.txt

```

iteration: 57 HingeLoss: 3057.0060173843626
iteration: 58 HingeLoss: 984.3169600872268
iteration: 59 HingeLoss: 2169.3658493560674
iteration: 60 HingeLoss: 356.65616791015117
iteration: 61 HingeLoss: 41.899974860154884
iteration: 62 HingeLoss: 4.922410016259369
iteration: 63 HingeLoss: 0.6656947217149101
iteration: 64 HingeLoss: 10459.077667684132
iteration: 65 HingeLoss: 1160.2819852266457
iteration: 66 HingeLoss: 433.0950390273117
iteration: 67 HingeLoss: 1653.6845628103504
iteration: 68 HingeLoss: 2026.2270104770562
iteration: 69 HingeLoss: 1460.741089363648
iteration: 70 HingeLoss: 357.84245982369396
iteration: 71 HingeLoss: 4784.540877593524
iteration: 72 HingeLoss: 160.50009228478712
iteration: 73 HingeLoss: 18.855554556059893
iteration: 74 HingeLoss: 2.215150985618781
iteration: 75 HingeLoss: 0.7908759590257859
iteration: 76 HingeLoss: 3611.234134604527
iteration: 77 HingeLoss: 670.3046286831352
iteration: 78 HingeLoss: 97.4286822769318
iteration: 79 HingeLoss: 2310.7820828358263
iteration: 80 HingeLoss: 2003.3135749009627
iteration: 81 HingeLoss: 846.215940956535
iteration: 82 HingeLoss: 2204.6123279974
iteration: 83 HingeLoss: 268.15641827799107
iteration: 84 HingeLoss: 1288.4891647999666
iteration: 85 HingeLoss: 4297.798689683535
iteration: 86 HingeLoss: 5941.843742229878
iteration: 87 HingeLoss: 2380.2396599595263
iteration: 88 HingeLoss: 1515.7068915438754
iteration: 89 HingeLoss: 749.9339591150547
iteration: 90 HingeLoss: 254.30998529864598
iteration: 91 HingeLoss: 1557.1586799902118
iteration: 92 HingeLoss: 1770.5851201711396
iteration: 93 HingeLoss: 2807.1954093893655
iteration: 94 HingeLoss: 1851.117852123967
iteration: 95 HingeLoss: 2023.9654872451883
iteration: 96 HingeLoss: 3997.0086987420873
iteration: 97 HingeLoss: 691.1199323466022
iteration: 98 HingeLoss: 381.03956504012734
iteration: 99 HingeLoss: 2312.3497326990455
[-0.11362648 -0.0840334 -0.01457079 ... 0.02649348 -0.00407099
0.00144853]
Accuracy (Hinge Loss): 0.65
eta = 0.01 lambda = 0.3
CROSS VALIDATION 0
iteration: 0 HingeLoss: 1614.873212963052
iteration: 1 HingeLoss: 379.58109088837455
iteration: 2 HingeLoss: 200.56784844346643
iteration: 3 HingeLoss: 105.978571627719

```

# Output\_hinge\_train.txt

```

iteration: 4 HingeLoss: 55.998295496585264
iteration: 5 HingeLoss: 29.58908626866889
iteration: 6 HingeLoss: 15.634654920311245
iteration: 7 HingeLoss: 8.261236330776674
iteration: 8 HingeLoss: 4.365176338128339
iteration: 9 HingeLoss: 2.3065269773203667
iteration: 10 HingeLoss: 1.2187518407074756
iteration: 11 HingeLoss: 0.6439794825003471
iteration: 12 HingeLoss: 0.3402740082350805
iteration: 13 HingeLoss: 0.17979827591837158
iteration: 14 HingeLoss: 0.09500408271232184
iteration: 15 HingeLoss: 0.05019945650706573
iteration: 16 HingeLoss: 0.026525022521773647
iteration: 17 HingeLoss: 0.014015626238534444
iteration: 18 HingeLoss: 0.10809602120910708
iteration: 19 HingeLoss: 1307.0912023435988
iteration: 20 HingeLoss: 2290.8371973368357
iteration: 21 HingeLoss: 960.7056954264062
iteration: 22 HingeLoss: 187.30312486831846
iteration: 23 HingeLoss: 98.9695895379153
iteration: 24 HingeLoss: 52.29480106212694
iteration: 25 HingeLoss: 27.632187128347656
iteration: 26 HingeLoss: 14.6006438496425
iteration: 27 HingeLoss: 7.714872508423511
iteration: 28 HingeLoss: 4.076481724652588
iteration: 29 HingeLoss: 2.1539828731171453
iteration: 30 HingeLoss: 1.138148661288895
iteration: 31 HingeLoss: 0.6013893570653538
iteration: 32 HingeLoss: 0.3177697001215185
iteration: 33 HingeLoss: 0.16790716551431478
iteration: 34 HingeLoss: 0.08872090768965787
iteration: 35 HingeLoss: 0.04687947317296428
iteration: 36 HingeLoss: 0.0247707678179093
iteration: 37 HingeLoss: 0.013088690993281743
iteration: 38 HingeLoss: 0.006915967772050832
iteration: 39 HingeLoss: 0.003654346355078336
iteration: 40 HingeLoss: 0.19642078479188155
iteration: 41 HingeLoss: 3770.4456527066045
iteration: 42 HingeLoss: 1695.4598361685928
iteration: 43 HingeLoss: 237.29784395886986
iteration: 44 HingeLoss: 125.38643031904942
iteration: 45 HingeLoss: 66.2532648669107
iteration: 46 HingeLoss: 35.00773643811234
iteration: 47 HingeLoss: 18.497829699143143
iteration: 48 HingeLoss: 9.774116763687356
iteration: 49 HingeLoss: 5.164571199107724
iteration: 50 HingeLoss: 2.728921325121399
iteration: 51 HingeLoss: 1.4419418982913712
iteration: 52 HingeLoss: 0.761911462565022
iteration: 53 HingeLoss: 0.4025883965753716
iteration: 54 HingeLoss: 0.212724739054962
iteration: 55 HingeLoss: 0.11240218295146454

```

# Output\_hinge\_train.txt

```

iteration: 56 HingeLoss: 0.05939248433624907
iteration: 57 HingeLoss: 0.031382550614295096
iteration: 58 HingeLoss: 0.016582308251040772
iteration: 59 HingeLoss: 0.00876196936036428
iteration: 60 HingeLoss: 0.019550779199406648
iteration: 61 HingeLoss: 6413.46322786805
iteration: 62 HingeLoss: 1086.170595721766
iteration: 63 HingeLoss: 452.2778280244845
iteration: 64 HingeLoss: 1076.3044510056068
iteration: 65 HingeLoss: 196.2150057443732
iteration: 66 HingeLoss: 103.67856165428562
iteration: 67 HingeLoss: 54.782987192658986
iteration: 68 HingeLoss: 28.946926325602465
iteration: 69 HingeLoss: 15.2953423432912
iteration: 70 HingeLoss: 8.081946068020326
iteration: 71 HingeLoss: 4.270440685823468
iteration: 72 HingeLoss: 2.2564693574605204
iteration: 73 HingeLoss: 1.1923017636238333
iteration: 74 HingeLoss: 0.630003456878486
iteration: 75 HingeLoss: 0.3328891793907168
iteration: 76 HingeLoss: 0.17589618683123945
iteration: 77 HingeLoss: 0.0929422476224623
iteration: 78 HingeLoss: 0.049109998054721514
iteration: 79 HingeLoss: 0.025949360711951083
iteration: 80 HingeLoss: 0.013711450784596626
iteration: 81 HingeLoss: 0.0072450294519906784
iteration: 82 HingeLoss: 1870.8147310425243
iteration: 83 HingeLoss: 1470.539031174644
iteration: 84 HingeLoss: 293.16622464984783
iteration: 85 HingeLoss: 154.90687056275266
iteration: 86 HingeLoss: 81.85164773399784
iteration: 87 HingeLoss: 43.24980688352638
iteration: 88 HingeLoss: 22.85287892482314
iteration: 89 HingeLoss: 12.075292649492713
iteration: 90 HingeLoss: 6.380495562531023
iteration: 91 HingeLoss: 3.37140678948169
iteration: 92 HingeLoss: 1.7814264783618785
iteration: 93 HingeLoss: 0.9412926104644543
iteration: 94 HingeLoss: 0.4973720719194332
iteration: 95 HingeLoss: 0.262807733934475
iteration: 96 HingeLoss: 0.1388656680083191
iteration: 97 HingeLoss: 0.07337559463225175
iteration: 98 HingeLoss: 0.22652056776229418
iteration: 99 HingeLoss: 1255.630676163556
[-0.03780288 -0.03487231 -0.11328657 ... 0.04899272 -0.0415524
0.02375153]
CROSS VALIDATION 1
iteration: 0 HingeLoss: 1663.967002850774
iteration: 1 HingeLoss: 1549.6125876776925
iteration: 2 HingeLoss: 440.29552824138693
iteration: 3 HingeLoss: 179.71637378348308
iteration: 4 HingeLoss: 94.96080622839835

```

Output\_hinge\_train.txt

iteration: 5 HingeLoss: 50.176589532189745  
iteration: 6 HingeLoss: 26.512939780927542  
iteration: 7 HingeLoss: 14.009241807399764  
iteration: 8 HingeLoss: 7.402380031782783  
iteration: 9 HingeLoss: 3.911363005098057  
iteration: 10 HingeLoss: 2.0667353597036495  
iteration: 11 HingeLoss: 1.092047718782954  
iteration: 12 HingeLoss: 0.5770299591090642  
iteration: 13 HingeLoss: 0.30489837392864455  
iteration: 14 HingeLoss: 0.16110605169940687  
iteration: 15 HingeLoss: 0.08512724931831302  
iteration: 16 HingeLoss: 0.04498061059818592  
iteration: 17 HingeLoss: 0.023767422840366356  
iteration: 18 HingeLoss: 0.012558530908327653  
iteration: 19 HingeLoss: 1285.8288434930614  
iteration: 20 HingeLoss: 740.9986372488324  
iteration: 21 HingeLoss: 247.7559147580308  
iteration: 22 HingeLoss: 130.91239778531076  
iteration: 23 HingeLoss: 69.17314531375455  
iteration: 24 HingeLoss: 36.550579727710875  
iteration: 25 HingeLoss: 19.313056712575218  
iteration: 26 HingeLoss: 10.204876704058433  
iteration: 27 HingeLoss: 5.39218157409679  
iteration: 28 HingeLoss: 2.8491889682964717  
iteration: 29 HingeLoss: 7352.23553937155  
iteration: 30 HingeLoss: 2411.1914129512447  
iteration: 31 HingeLoss: 372.7892701635382  
iteration: 32 HingeLoss: 196.9791004723649  
iteration: 33 HingeLoss: 104.08230367220757  
iteration: 34 HingeLoss: 54.99632149672377  
iteration: 35 HingeLoss: 29.059650598208666  
iteration: 36 HingeLoss: 15.35490501742511  
iteration: 37 HingeLoss: 8.113418545668305  
iteration: 38 HingeLoss: 4.287070510855757  
iteration: 39 HingeLoss: 2.2652564343375894  
iteration: 40 HingeLoss: 1.1969447902277566  
iteration: 41 HingeLoss: 0.6324567978866884  
iteration: 42 HingeLoss: 0.3341855066823678  
iteration: 43 HingeLoss: 0.17658115660978257  
iteration: 44 HingeLoss: 0.09330418060076129  
iteration: 45 HingeLoss: 0.049301240770654134  
iteration: 46 HingeLoss: 0.026050411952346947  
iteration: 47 HingeLoss: 4535.095728499053  
iteration: 48 HingeLoss: 1687.0200894525044  
iteration: 49 HingeLoss: 825.234246364876  
iteration: 50 HingeLoss: 616.7284916179275  
iteration: 51 HingeLoss: 215.09107679705778  
iteration: 52 HingeLoss: 113.65253835908484  
iteration: 53 HingeLoss: 60.05316291038226  
iteration: 54 HingeLoss: 31.731648299368032  
iteration: 55 HingeLoss: 16.766768892712367  
iteration: 56 HingeLoss: 8.859437002748644

# Output\_hinge\_train.txt

```

iteration: 57 HingeLoss: 4.681261160567865
iteration: 58 HingeLoss: 2.473543865896026
iteration: 59 HingeLoss: 1.3070023326298805
iteration: 60 HingeLoss: 0.6906103914519198
iteration: 61 HingeLoss: 0.3649134365519416
iteration: 62 HingeLoss: 0.192817568088126
iteration: 63 HingeLoss: 0.10188338065794168
iteration: 64 HingeLoss: 0.053834426796353065
iteration: 65 HingeLoss: 0.028445714009255264
iteration: 66 HingeLoss: 0.015030505452528682
iteration: 67 HingeLoss: 0.00794200820851215
iteration: 68 HingeLoss: 0.0041964985531117195
iteration: 69 HingeLoss: 2363.3239330333167
iteration: 70 HingeLoss: 581.1925200543587
iteration: 71 HingeLoss: 280.03315092582415
iteration: 72 HingeLoss: 147.96745128316718
iteration: 73 HingeLoss: 78.18490977532835
iteration: 74 HingeLoss: 41.312329593877635
iteration: 75 HingeLoss: 21.82913021678434
iteration: 76 HingeLoss: 11.53435138385285
iteration: 77 HingeLoss: 6.09466618802306
iteration: 78 HingeLoss: 3.2203766564135954
iteration: 79 HingeLoss: 1.7016232701232825
iteration: 80 HingeLoss: 0.8991251838999731
iteration: 81 HingeLoss: 0.47509111477100957
iteration: 82 HingeLoss: 0.25103464053284774
iteration: 83 HingeLoss: 0.13264485229918582
iteration: 84 HingeLoss: 0.07008856149942613
iteration: 85 HingeLoss: 0.08188761035436343
iteration: 86 HingeLoss: 4131.78507791973
iteration: 87 HingeLoss: 545.0286415554685
iteration: 88 HingeLoss: 287.98911379121506
iteration: 89 HingeLoss: 152.17132337403714
iteration: 90 HingeLoss: 80.40620477825904
iteration: 91 HingeLoss: 42.486045488031706
iteration: 92 HingeLoss: 22.449313037333784
iteration: 93 HingeLoss: 11.862051411449274
iteration: 94 HingeLoss: 6.267820465323998
iteration: 95 HingeLoss: 3.311870099265956
iteration: 96 HingeLoss: 1.7499677304245993
iteration: 97 HingeLoss: 0.924670040110019
iteration: 98 HingeLoss: 0.48858882836062867
iteration: 99 HingeLoss: 0.258166732827646
[-0.00471991 -0.00187484 -0.00191879 ... 0.00232249 0.00052483
0.00047904]

```

## CROSS VALIDATION 2

```

iteration: 0 HingeLoss: 2325.104280285816
iteration: 1 HingeLoss: 339.42983011696793
iteration: 2 HingeLoss: 179.35221842784534
iteration: 3 HingeLoss: 94.7683892246733
iteration: 4 HingeLoss: 50.07491780678649
iteration: 5 HingeLoss: 26.459217191206488

```

# Output\_hinge\_train.txt

```

iteration: 6 HingeLoss: 13.980855187276129
iteration: 7 HingeLoss: 7.387380751103508
iteration: 8 HingeLoss: 3.9034374958294
iteration: 9 HingeLoss: 2.062547579068654
iteration: 10 HingeLoss: 1.0898349263866085
iteration: 11 HingeLoss: 0.5758607359295104
iteration: 12 HingeLoss: 7574.772011527579
iteration: 13 HingeLoss: 1241.9812496264394
iteration: 14 HingeLoss: 244.50908555610343
iteration: 15 HingeLoss: 129.19679718526535
iteration: 16 HingeLoss: 68.26663461182754
iteration: 17 HingeLoss: 36.0715861596937
iteration: 18 HingeLoss: 19.05996004453358
iteration: 19 HingeLoss: 10.071142291634152
iteration: 20 HingeLoss: 5.321517297064411
iteration: 21 HingeLoss: 2.81185048556798
iteration: 22 HingeLoss: 1.4857610549439488
iteration: 23 HingeLoss: 3379.2910104704906
iteration: 24 HingeLoss: 1721.2716542209096
iteration: 25 HingeLoss: 931.6055862472253
iteration: 26 HingeLoss: 341.189666650104
iteration: 27 HingeLoss: 285.09692463429093
iteration: 28 HingeLoss: 150.60591629074122
iteration: 29 HingeLoss: 79.57905522267922
iteration: 30 HingeLoss: 42.04898576433648
iteration: 31 HingeLoss: 22.218373903306617
iteration: 32 HingeLoss: 11.740024876553068
iteration: 33 HingeLoss: 6.203342544414235
iteration: 34 HingeLoss: 3.2778004414789663
iteration: 35 HingeLoss: 1.7319655745649678
iteration: 36 HingeLoss: 0.9151578337467884
iteration: 37 HingeLoss: 0.48356264868513904
iteration: 38 HingeLoss: 0.25551093656275853
iteration: 39 HingeLoss: 0.13501009410196899
iteration: 40 HingeLoss: 0.07133833782079793
iteration: 41 HingeLoss: 0.26224249396676835
iteration: 42 HingeLoss: 1254.7929903967538
iteration: 43 HingeLoss: 1187.389787692651
iteration: 44 HingeLoss: 249.7272743071984
iteration: 45 HingeLoss: 131.9540496293466
iteration: 46 HingeLoss: 69.7235464643927
iteration: 47 HingeLoss: 36.84140763567104
iteration: 48 HingeLoss: 19.466728033847748
iteration: 49 HingeLoss: 10.286075496661509
iteration: 50 HingeLoss: 5.435086417144929
iteration: 51 HingeLoss: 2.8718595708753045
iteration: 52 HingeLoss: 1.5174694129629989
iteration: 53 HingeLoss: 0.8018196441883935
iteration: 54 HingeLoss: 0.42367558536224564
iteration: 55 HingeLoss: 0.22386705406018517
iteration: 56 HingeLoss: 0.11828970000887809
iteration: 57 HingeLoss: 0.06250340492008527

```

# Output\_hinge\_train.txt

```

iteration: 58 HingeLoss: 0.033026338103071776
iteration: 59 HingeLoss: 0.01745087343470316
iteration: 60 HingeLoss: 0.00922091279643576
iteration: 61 HingeLoss: 0.188096013880394
iteration: 62 HingeLoss: 3389.7805830538214
iteration: 63 HingeLoss: 536.0918138482854
iteration: 64 HingeLoss: 1864.5313684214464
iteration: 65 HingeLoss: 291.29252015437095
iteration: 66 HingeLoss: 153.91681892873396
iteration: 67 HingeLoss: 81.3285117537035
iteration: 68 HingeLoss: 42.97338569045424
iteration: 69 HingeLoss: 22.70682000542622
iteration: 70 HingeLoss: 11.998116193887784
iteration: 71 HingeLoss: 6.339716092681915
iteration: 72 HingeLoss: 3.3498592184234
iteration: 73 HingeLoss: 1.7700409007604512
iteration: 74 HingeLoss: 0.9352765552456344
iteration: 75 HingeLoss: 0.4941932327192725
iteration: 76 HingeLoss: 0.2611280587498344
iteration: 77 HingeLoss: 0.137978140030888
iteration: 78 HingeLoss: 0.07290663139583202
iteration: 79 HingeLoss: 0.03852332623340052
iteration: 80 HingeLoss: 0.020355441414206473
iteration: 81 HingeLoss: 0.010755665091244043
iteration: 82 HingeLoss: 0.005683214094992182
iteration: 83 HingeLoss: 0.003002968405534646
iteration: 84 HingeLoss: 0.0015867463540719733
iteration: 85 HingeLoss: 6423.167785542413
iteration: 86 HingeLoss: 1104.0707838750425
iteration: 87 HingeLoss: 460.6273534584137
iteration: 88 HingeLoss: 703.3836577904725
iteration: 89 HingeLoss: 292.2252956505291
iteration: 90 HingeLoss: 154.40969062028051
iteration: 91 HingeLoss: 81.58894151984606
iteration: 92 HingeLoss: 43.11099485782239
iteration: 93 HingeLoss: 22.779531674388796
iteration: 94 HingeLoss: 12.036536503409593
iteration: 95 HingeLoss: 6.36001710082562
iteration: 96 HingeLoss: 3.3605861213760377
iteration: 97 HingeLoss: 1.7757089171535683
iteration: 98 HingeLoss: 0.9382714932976041
iteration: 99 HingeLoss: 0.49577573589375645
[-0.00718214 -0.00307314 -0.00128695 ... 0.00554799 0.00159942
0.00014468]

```

## CROSS VALIDATION 3

```

iteration: 0 HingeLoss: 2398.237185617972
iteration: 1 HingeLoss: 423.8346378687693
iteration: 2 HingeLoss: 296.55625233706013
iteration: 3 HingeLoss: 156.6981361861183
iteration: 4 HingeLoss: 82.79813927610375
iteration: 5 HingeLoss: 43.74992603257521
iteration: 6 HingeLoss: 23.117138194048955

```



Output\_hinge\_train.txt

iteration: 7 HingeLoss: 12.214925298041726  
iteration: 8 HingeLoss: 6.454276424023343  
iteration: 9 HingeLoss: 3.4103920524493088  
iteration: 10 HingeLoss: 1.8020260037389668  
iteration: 11 HingeLoss: 0.9521772477211985  
iteration: 12 HingeLoss: 0.5031234339553118  
iteration: 13 HingeLoss: 0.26584671120928044  
iteration: 14 HingeLoss: 0.14047144118329422  
iteration: 15 HingeLoss: 0.07422407333291413  
iteration: 16 HingeLoss: 0.03921945283483721  
iteration: 17 HingeLoss: 0.02072326957542401  
iteration: 18 HingeLoss: 0.2303158004012222  
iteration: 19 HingeLoss: 1310.847893682102  
iteration: 20 HingeLoss: 2270.1756618864956  
iteration: 21 HingeLoss: 1328.497619337631  
iteration: 22 HingeLoss: 176.73504047250455  
iteration: 23 HingeLoss: 93.3854916986984  
iteration: 24 HingeLoss: 49.34420495501239  
iteration: 25 HingeLoss: 26.07311391043631  
iteration: 26 HingeLoss: 13.776841061810083  
iteration: 27 HingeLoss: 7.279581192118543  
iteration: 28 HingeLoss: 3.8464770040457705  
iteration: 29 HingeLoss: 2.032450075379556  
iteration: 30 HingeLoss: 1.0739316274516864  
iteration: 31 HingeLoss: 0.5674575500830673  
iteration: 32 HingeLoss: 0.299840383610234  
iteration: 33 HingeLoss: 0.15843344692545144  
iteration: 34 HingeLoss: 0.08371506467023847  
iteration: 35 HingeLoss: 0.04423442264713093  
iteration: 36 HingeLoss: 0.023373142631288327  
iteration: 37 HingeLoss: 0.05036588198190703  
iteration: 38 HingeLoss: 6133.3058362209  
iteration: 39 HingeLoss: 480.3154770671299  
iteration: 40 HingeLoss: 253.79515503258128  
iteration: 41 HingeLoss: 134.10348779789513  
iteration: 42 HingeLoss: 70.85929373731152  
iteration: 43 HingeLoss: 37.441528116835485  
iteration: 44 HingeLoss: 19.78382726930312  
iteration: 45 HingeLoss: 10.453628393591913  
iteration: 46 HingeLoss: 5.523620131928111  
iteration: 47 HingeLoss: 2.9186401326973166  
iteration: 48 HingeLoss: 1.5421879167526857  
iteration: 49 HingeLoss: 0.8148807192546879  
iteration: 50 HingeLoss: 9339.588380651538  
iteration: 51 HingeLoss: 1096.1664584317136  
iteration: 52 HingeLoss: 1575.1657030915794  
iteration: 53 HingeLoss: 304.93276480900835  
iteration: 54 HingeLoss: 1315.3133066779988  
iteration: 55 HingeLoss: 197.46302473531395  
iteration: 56 HingeLoss: 104.33800568307996  
iteration: 57 HingeLoss: 55.13143255308147  
iteration: 58 HingeLoss: 29.13104228374064

# Output\_hinge\_train.txt

```

iteration: 59 HingeLoss: 15.392627857439068
iteration: 60 HingeLoss: 8.133351016068946
iteration: 61 HingeLoss: 4.2976026811834815
iteration: 62 HingeLoss: 2.2708215554481477
iteration: 63 HingeLoss: 1.1998853591714305
iteration: 64 HingeLoss: 0.634010572825403
iteration: 65 HingeLoss: 0.33500650989855557
iteration: 66 HingeLoss: 0.17701496865308153
iteration: 67 HingeLoss: 0.09353340368442356
iteration: 68 HingeLoss: 0.09089533581839873
iteration: 69 HingeLoss: 1963.764094118419
iteration: 70 HingeLoss: 950.9899554600951
iteration: 71 HingeLoss: 207.24863713458166
iteration: 72 HingeLoss: 109.5086510912307
iteration: 73 HingeLoss: 57.863563445454794
iteration: 74 HingeLoss: 30.57468009369254
iteration: 75 HingeLoss: 16.155435427215608
iteration: 76 HingeLoss: 8.536412909084742
iteration: 77 HingeLoss: 4.510577612264816
iteration: 78 HingeLoss: 2.383355938020805
iteration: 79 HingeLoss: 1.2593476968123467
iteration: 80 HingeLoss: 0.6654300334106106
iteration: 81 HingeLoss: 0.3516083211059599
iteration: 82 HingeLoss: 0.18578724323172469
iteration: 83 HingeLoss: 0.0981686088630482
iteration: 84 HingeLoss: 0.05187156878196542
iteration: 85 HingeLoss: 0.027408554313485486
iteration: 86 HingeLoss: 0.014482477919897981
iteration: 87 HingeLoss: 0.007652434502798122
iteration: 88 HingeLoss: 0.004043489943054416
iteration: 89 HingeLoss: 0.002136550259084724
iteration: 90 HingeLoss: 13760.893591789954
iteration: 91 HingeLoss: 4795.641722433319
iteration: 92 HingeLoss: 506.97470787470974
iteration: 93 HingeLoss: 256.7329036097279
iteration: 94 HingeLoss: 135.65577247574114
iteration: 95 HingeLoss: 71.67950951064915
iteration: 96 HingeLoss: 37.87492408114106
iteration: 97 HingeLoss: 20.012830499894516
iteration: 98 HingeLoss: 10.703604872763991
iteration: 99 HingeLoss: 1558.5307811801622
[-0.11955355 -0.09759172 -0.08881207 ... 0.07217428 0.01390825
0.0256782 ]

```

## CROSS VALIDATION 4

```

iteration: 0 HingeLoss: 2398.237185617972
iteration: 1 HingeLoss: 423.8346378687693
iteration: 2 HingeLoss: 296.55625233706013
iteration: 3 HingeLoss: 156.6981361861183
iteration: 4 HingeLoss: 82.79813927610375
iteration: 5 HingeLoss: 43.74992603257521
iteration: 6 HingeLoss: 23.117138194048955
iteration: 7 HingeLoss: 12.214925298041726

```

# Output\_hinge\_train.txt

```

iteration: 8 HingeLoss: 6.454276424023343
iteration: 9 HingeLoss: 3.4103920524493088
iteration: 10 HingeLoss: 1.8020260037389668
iteration: 11 HingeLoss: 0.9521772477211985
iteration: 12 HingeLoss: 0.5031234339553118
iteration: 13 HingeLoss: 0.26584671120928044
iteration: 14 HingeLoss: 0.14047144118329422
iteration: 15 HingeLoss: 0.07422407333291413
iteration: 16 HingeLoss: 0.03921945283483721
iteration: 17 HingeLoss: 0.02072326957542401
iteration: 18 HingeLoss: 0.2303158004012222
iteration: 19 HingeLoss: 1310.847893682102
iteration: 20 HingeLoss: 2270.1756618864956
iteration: 21 HingeLoss: 1328.497619337631
iteration: 22 HingeLoss: 176.73504047250455
iteration: 23 HingeLoss: 93.3854916986984
iteration: 24 HingeLoss: 49.34420495501239
iteration: 25 HingeLoss: 26.07311391043631
iteration: 26 HingeLoss: 13.776841061810083
iteration: 27 HingeLoss: 7.279581192118543
iteration: 28 HingeLoss: 3.8464770040457705
iteration: 29 HingeLoss: 2.032450075379556
iteration: 30 HingeLoss: 1.0739316274516864
iteration: 31 HingeLoss: 0.5674575500830673
iteration: 32 HingeLoss: 0.299840383610234
iteration: 33 HingeLoss: 0.15843344692545144
iteration: 34 HingeLoss: 0.08371506467023847
iteration: 35 HingeLoss: 0.04423442264713093
iteration: 36 HingeLoss: 0.023373142631288327
iteration: 37 HingeLoss: 0.05036588198190703
iteration: 38 HingeLoss: 6133.3058362209
iteration: 39 HingeLoss: 480.3154770671299
iteration: 40 HingeLoss: 253.79515503258128
iteration: 41 HingeLoss: 134.10348779789513
iteration: 42 HingeLoss: 70.85929373731152
iteration: 43 HingeLoss: 37.441528116835485
iteration: 44 HingeLoss: 19.78382726930312
iteration: 45 HingeLoss: 10.453628393591913
iteration: 46 HingeLoss: 5.523620131928111
iteration: 47 HingeLoss: 2.9186401326973166
iteration: 48 HingeLoss: 1.5421879167526857
iteration: 49 HingeLoss: 0.8148807192546879
iteration: 50 HingeLoss: 9220.105382623811
iteration: 51 HingeLoss: 1096.1664584317136
iteration: 52 HingeLoss: 1575.1657030915794
iteration: 53 HingeLoss: 304.93276480900835
iteration: 54 HingeLoss: 1397.5314007734291
iteration: 55 HingeLoss: 207.69121396680848
iteration: 56 HingeLoss: 109.74250542470894
iteration: 57 HingeLoss: 57.98713035023697
iteration: 58 HingeLoss: 30.63997193468749
iteration: 59 HingeLoss: 16.189935154371728

```

# Output\_hinge\_train.txt

```

iteration: 60 HingeLoss: 8.55464231042661
iteration: 61 HingeLoss: 4.520209893464583
iteration: 62 HingeLoss: 2.3884455643541878
iteration: 63 HingeLoss: 1.2620370178232505
iteration: 64 HingeLoss: 0.6668510507949815
iteration: 65 HingeLoss: 0.35235917620971907
iteration: 66 HingeLoss: 0.18618398952986437
iteration: 67 HingeLoss: 0.09837824668038402
iteration: 68 HingeLoss: 0.05198233985825118
iteration: 69 HingeLoss: 0.027467084933091437
iteration: 70 HingeLoss: 0.014513405067546347
iteration: 71 HingeLoss: 0.13721698560395168
iteration: 72 HingeLoss: 3687.2991266748704
iteration: 73 HingeLoss: 1373.8418970056741
iteration: 74 HingeLoss: 277.7704144620018
iteration: 75 HingeLoss: 146.77183802677115
iteration: 76 HingeLoss: 77.55315655009629
iteration: 77 HingeLoss: 40.97851584979608
iteration: 78 HingeLoss: 21.652745496790523
iteration: 79 HingeLoss: 11.441150998910937
iteration: 80 HingeLoss: 6.045419792112896
iteration: 81 HingeLoss: 3.1943552240809656
iteration: 82 HingeLoss: 1.6878737372259571
iteration: 83 HingeLoss: 0.8918600321405298
iteration: 84 HingeLoss: 0.4712522621727504
iteration: 85 HingeLoss: 0.24900621913724436
iteration: 86 HingeLoss: 0.13157304939641035
iteration: 87 HingeLoss: 0.18055333540387528
iteration: 88 HingeLoss: 1467.4157298524137
iteration: 89 HingeLoss: 384.01203548542253
iteration: 90 HingeLoss: 202.90912688366
iteration: 91 HingeLoss: 107.21568588506426
iteration: 92 HingeLoss: 56.65197754458658
iteration: 93 HingeLoss: 29.934487040943655
iteration: 94 HingeLoss: 15.817162140530591
iteration: 95 HingeLoss: 8.357671799675085
iteration: 96 HingeLoss: 4.416132128537505
iteration: 97 HingeLoss: 2.3334516410969104
iteration: 98 HingeLoss: 1.2329786344370746
iteration: 99 HingeLoss: 0.6514968153630469
[-6.03246307e-03 1.26224019e-05 7.49740300e-04 ... 1.97966403e-03
 2.49980866e-03 -3.62401124e-04]

```

## CROSS VALIDATION 5

```

iteration: 0 HingeLoss: 2278.7599976488873
iteration: 1 HingeLoss: 957.7064066500187
iteration: 2 HingeLoss: 239.70902765294267
iteration: 3 HingeLoss: 126.66048199688798
iteration: 4 HingeLoss: 66.92646437543151
iteration: 5 HingeLoss: 35.36345009255496
iteration: 6 HingeLoss: 18.685786170226958
iteration: 7 HingeLoss: 9.873431576546128
iteration: 8 HingeLoss: 5.217048413626045

```

# Output\_hinge\_train.txt

```

iteration: 9 HingeLoss: 2.7566498981744267
iteration: 10 HingeLoss: 1.4565934717526234
iteration: 11 HingeLoss: 0.769653245904538
iteration: 12 HingeLoss: 0.4066790977846654
iteration: 13 HingeLoss: 0.21488623539887344
iteration: 14 HingeLoss: 0.11354430167529801
iteration: 15 HingeLoss: 0.059995971445077796
iteration: 16 HingeLoss: 0.1055078592981901
iteration: 17 HingeLoss: 5984.2460459849935
iteration: 18 HingeLoss: 383.88269488813256
iteration: 19 HingeLoss: 718.6946413597645
iteration: 20 HingeLoss: 1350.8679947065966
iteration: 21 HingeLoss: 2489.4382390487217
iteration: 22 HingeLoss: 955.8097668234473
iteration: 23 HingeLoss: 149.6242124941462
iteration: 24 HingeLoss: 79.06033017810172
iteration: 25 HingeLoss: 41.77489527715978
iteration: 26 HingeLoss: 22.073546511712404
iteration: 27 HingeLoss: 11.663499151154712
iteration: 28 HingeLoss: 6.162906915606171
iteration: 29 HingeLoss: 3.256434553490418
iteration: 30 HingeLoss: 1.7206759969574053
iteration: 31 HingeLoss: 0.9091925042165823
iteration: 32 HingeLoss: 0.4804106125646633
iteration: 33 HingeLoss: 0.2538454239277106
iteration: 34 HingeLoss: 0.1341300495112725
iteration: 35 HingeLoss: 0.07087332875072755
iteration: 36 HingeLoss: 0.03744894411439518
iteration: 37 HingeLoss: 10330.534214780151
iteration: 38 HingeLoss: 4394.62356776914
iteration: 39 HingeLoss: 346.7083504883114
iteration: 40 HingeLoss: 183.19813490201872
iteration: 41 HingeLoss: 96.80054312020305
iteration: 42 HingeLoss: 51.14869293499031
iteration: 43 HingeLoss: 27.026592048241383
iteration: 44 HingeLoss: 14.280651876489701
iteration: 45 HingeLoss: 7.5457911102320745
iteration: 46 HingeLoss: 3.987140361078076
iteration: 47 HingeLoss: 2.1067755556314185
iteration: 48 HingeLoss: 1.1132046629544678
iteration: 49 HingeLoss: 0.5882091323449797
iteration: 50 HingeLoss: 0.3283909817907764
iteration: 51 HingeLoss: 1208.3715965334254
iteration: 52 HingeLoss: 509.10300775574
iteration: 53 HingeLoss: 285.32942112029957
iteration: 54 HingeLoss: 150.76596138596258
iteration: 55 HingeLoss: 79.6636218704207
iteration: 56 HingeLoss: 42.09367015719674
iteration: 57 HingeLoss: 22.24198480687931
iteration: 58 HingeLoss: 11.752500703834926
iteration: 59 HingeLoss: 6.209934679521965
iteration: 60 HingeLoss: 3.2812836770429703

```

# Output\_hinge\_train.txt

```

iteration: 61 HingeLoss: 1.7338060905428814
iteration: 62 HingeLoss: 0.9161303488129421
iteration: 63 HingeLoss: 0.48407651847233185
iteration: 64 HingeLoss: 0.25578246156774803
iteration: 65 HingeLoss: 0.13515356591169989
iteration: 66 HingeLoss: 0.0714141472667391
iteration: 67 HingeLoss: 0.03773470862890499
iteration: 68 HingeLoss: 0.019938741689233024
iteration: 69 HingeLoss: 0.010535484030355827
iteration: 70 HingeLoss: 0.005566872046585622
iteration: 71 HingeLoss: 7166.038555729103
iteration: 72 HingeLoss: 2012.1546450833764
iteration: 73 HingeLoss: 1316.5084439129046
iteration: 74 HingeLoss: 222.37223858304455
iteration: 75 HingeLoss: 117.49985053727136
iteration: 76 HingeLoss: 62.086054285617166
iteration: 77 HingeLoss: 32.805813106408
iteration: 78 HingeLoss: 17.334349653169845
iteration: 79 HingeLoss: 9.159342489811854
iteration: 80 HingeLoss: 4.839729007677634
iteration: 81 HingeLoss: 2.557277107369906
iteration: 82 HingeLoss: 1.3512463597659736
iteration: 83 HingeLoss: 0.7139886090243279
iteration: 84 HingeLoss: 0.37726631426765483
iteration: 85 HingeLoss: 0.1993447375520402
iteration: 86 HingeLoss: 0.10533228885497344
iteration: 87 HingeLoss: 0.055656804446774864
iteration: 88 HingeLoss: 0.029408644916959638
iteration: 89 HingeLoss: 0.015539311041094671
iteration: 90 HingeLoss: 0.008210857328303272
iteration: 91 HingeLoss: 6232.650190128971
iteration: 92 HingeLoss: 373.3692650327822
iteration: 93 HingeLoss: 766.1543857507017
iteration: 94 HingeLoss: 1404.4879950205082
iteration: 95 HingeLoss: 2510.6906790778166
iteration: 96 HingeLoss: 956.5746410484877
iteration: 97 HingeLoss: 149.5042649785101
iteration: 98 HingeLoss: 78.99695079563308
iteration: 99 HingeLoss: 41.7414060789817
[-0.05753272 -0.0004542 -0.0128458 ... 0.04410291 0.01930674
0.00628284]

```

## CROSS VALIDATION 6

```

iteration: 0 HingeLoss: 2389.9647538886747
iteration: 1 HingeLoss: 423.7087341970929
iteration: 2 HingeLoss: 296.62721265481224
iteration: 3 HingeLoss: 156.7356310945793
iteration: 4 HingeLoss: 82.81795130915317
iteration: 5 HingeLoss: 43.76039456469498
iteration: 6 HingeLoss: 23.122669689199853
iteration: 7 HingeLoss: 12.217848099276347
iteration: 8 HingeLoss: 6.455820810635655
iteration: 9 HingeLoss: 3.4112080949430794

```

# Output\_hinge\_train.txt

```

iteration: 10 HingeLoss: 1.8024571945731354
iteration: 11 HingeLoss: 0.9524050857772917
iteration: 12 HingeLoss: 0.5032438219035026
iteration: 13 HingeLoss: 0.2659103233130622
iteration: 14 HingeLoss: 0.1405050533496974
iteration: 15 HingeLoss: 0.07424183375370125
iteration: 16 HingeLoss: 0.039228837310171266
iteration: 17 HingeLoss: 0.020728228262965904
iteration: 18 HingeLoss: 0.2273129063442107
iteration: 19 HingeLoss: 1310.6684200100935
iteration: 20 HingeLoss: 2270.0480488729477
iteration: 21 HingeLoss: 1334.370768325206
iteration: 22 HingeLoss: 176.88744456857836
iteration: 23 HingeLoss: 93.4660208988541
iteration: 24 HingeLoss: 49.386755990350565
iteration: 25 HingeLoss: 26.095597563631085
iteration: 26 HingeLoss: 13.788721258307408
iteration: 27 HingeLoss: 7.285858600313396
iteration: 28 HingeLoss: 3.8497939402305974
iteration: 29 HingeLoss: 2.03420271999222
iteration: 30 HingeLoss: 1.0748577119366258
iteration: 31 HingeLoss: 0.5679468862936424
iteration: 32 HingeLoss: 0.3000989452543108
iteration: 33 HingeLoss: 0.15857006899090023
iteration: 34 HingeLoss: 0.08378725476182816
iteration: 35 HingeLoss: 0.04427256735901631
iteration: 36 HingeLoss: 0.023393298015673893
iteration: 37 HingeLoss: 0.044601482687262994
iteration: 38 HingeLoss: 6132.975664428579
iteration: 39 HingeLoss: 480.6093112887983
iteration: 40 HingeLoss: 253.95041486784126
iteration: 41 HingeLoss: 134.1855259495714
iteration: 42 HingeLoss: 70.90264209150243
iteration: 43 HingeLoss: 37.46443306743059
iteration: 44 HingeLoss: 19.795930076239063
iteration: 45 HingeLoss: 10.46002342750045
iteration: 46 HingeLoss: 5.526999220672383
iteration: 47 HingeLoss: 2.9204256182639217
iteration: 48 HingeLoss: 1.5431313541554357
iteration: 49 HingeLoss: 0.8153792246190307
iteration: 50 HingeLoss: 9574.359312309442
iteration: 51 HingeLoss: 1096.2031825133333
iteration: 52 HingeLoss: 1575.1507039654848
iteration: 53 HingeLoss: 304.98313044989857
iteration: 54 HingeLoss: 1432.3901163816586
iteration: 55 HingeLoss: 207.9884652192334
iteration: 56 HingeLoss: 109.89957079381482
iteration: 57 HingeLoss: 58.07012253267898
iteration: 58 HingeLoss: 30.68382439169758
iteration: 59 HingeLoss: 16.213106469177976
iteration: 60 HingeLoss: 8.566885862246904
iteration: 61 HingeLoss: 4.5266792959318

```

# Output\_hinge\_train.txt

```

iteration: 62 HingeLoss: 2.391863948896282
iteration: 63 HingeLoss: 1.2638432669995614
iteration: 64 HingeLoss: 0.6678054595359376
iteration: 65 HingeLoss: 0.3528634787482391
iteration: 66 HingeLoss: 0.1864504592712279
iteration: 67 HingeLoss: 0.09851904732610503
iteration: 68 HingeLoss: 0.05205673788083343
iteration: 69 HingeLoss: 0.027506396299426507
iteration: 70 HingeLoss: 0.014534176903537283
iteration: 71 HingeLoss: 0.134883229678592
iteration: 72 HingeLoss: 3687.0116699530795
iteration: 73 HingeLoss: 1853.1401854916373
iteration: 74 HingeLoss: 313.38753927968935
iteration: 75 HingeLoss: 165.5916640505253
iteration: 76 HingeLoss: 87.49741379650045
iteration: 77 HingeLoss: 46.465911832356916
iteration: 78 HingeLoss: 313.32377112621504
iteration: 79 HingeLoss: 1428.3575259690133
iteration: 80 HingeLoss: 653.6960328024966
iteration: 81 HingeLoss: 1319.7635015709998
iteration: 82 HingeLoss: 219.97603645090953
iteration: 83 HingeLoss: 538.1771099590222
iteration: 84 HingeLoss: 118.99177201107719
iteration: 85 HingeLoss: 62.8743745872094
iteration: 86 HingeLoss: 33.22235573872044
iteration: 87 HingeLoss: 17.554447707454763
iteration: 88 HingeLoss: 9.275640678141524
iteration: 89 HingeLoss: 4.9011801125168235
iteration: 90 HingeLoss: 2.5897474178725304
iteration: 91 HingeLoss: 1.3684034323181413
iteration: 92 HingeLoss: 0.7230542796016551
iteration: 93 HingeLoss: 0.38205654772774716
iteration: 94 HingeLoss: 0.20187586157717033
iteration: 95 HingeLoss: 0.10666971611900218
iteration: 96 HingeLoss: 0.05636349114754829
iteration: 97 HingeLoss: 0.029782052956770066
iteration: 98 HingeLoss: 0.015736617094884102
iteration: 99 HingeLoss: 0.00831511239169644
[-1.05473106e-03 -2.02632340e-04 -8.20791426e-04 ... 2.38602372e-05
 1.79072839e-04 2.21230492e-04]

```

## CROSS VALIDATION 7

```

iteration: 0 HingeLoss: 2389.9647538886747
iteration: 1 HingeLoss: 423.7087341970929
iteration: 2 HingeLoss: 296.62721265481224
iteration: 3 HingeLoss: 156.7356310945793
iteration: 4 HingeLoss: 82.81795130915317
iteration: 5 HingeLoss: 43.76039456469498
iteration: 6 HingeLoss: 23.122669689199853
iteration: 7 HingeLoss: 12.217848099276347
iteration: 8 HingeLoss: 6.455820810635655
iteration: 9 HingeLoss: 3.4112080949430794
iteration: 10 HingeLoss: 1.8024571945731354

```



# Output\_hinge\_train.txt

```

iteration: 11 HingeLoss: 0.9524050857772917
iteration: 12 HingeLoss: 0.5032438219035026
iteration: 13 HingeLoss: 0.2659103233130622
iteration: 14 HingeLoss: 0.1405050533496974
iteration: 15 HingeLoss: 0.07424183375370125
iteration: 16 HingeLoss: 0.039228837310171266
iteration: 17 HingeLoss: 0.020728228262965904
iteration: 18 HingeLoss: 0.2273129063442107
iteration: 19 HingeLoss: 1310.6684200100935
iteration: 20 HingeLoss: 2270.0480488729477
iteration: 21 HingeLoss: 1334.370768325206
iteration: 22 HingeLoss: 176.88744456857836
iteration: 23 HingeLoss: 93.4660208988541
iteration: 24 HingeLoss: 49.386755990350565
iteration: 25 HingeLoss: 26.095597563631085
iteration: 26 HingeLoss: 13.788721258307408
iteration: 27 HingeLoss: 7.285858600313396
iteration: 28 HingeLoss: 3.8497939402305974
iteration: 29 HingeLoss: 2.03420271999222
iteration: 30 HingeLoss: 1.0748577119366258
iteration: 31 HingeLoss: 0.5679468862936424
iteration: 32 HingeLoss: 0.3000989452543108
iteration: 33 HingeLoss: 0.15857006899090023
iteration: 34 HingeLoss: 0.08378725476182816
iteration: 35 HingeLoss: 0.04427256735901631
iteration: 36 HingeLoss: 0.023393298015673893
iteration: 37 HingeLoss: 0.044601482687262994
iteration: 38 HingeLoss: 6132.975664428579
iteration: 39 HingeLoss: 480.6093112887983
iteration: 40 HingeLoss: 253.95041486784126
iteration: 41 HingeLoss: 134.1855259495714
iteration: 42 HingeLoss: 70.90264209150243
iteration: 43 HingeLoss: 37.46443306743059
iteration: 44 HingeLoss: 19.795930076239063
iteration: 45 HingeLoss: 10.46002342750045
iteration: 46 HingeLoss: 5.526999220672383
iteration: 47 HingeLoss: 2.9204256182639217
iteration: 48 HingeLoss: 1.5431313541554357
iteration: 49 HingeLoss: 0.8153792246190307
iteration: 50 HingeLoss: 9158.323365435239
iteration: 51 HingeLoss: 1096.2031825133333
iteration: 52 HingeLoss: 1575.1507039654848
iteration: 53 HingeLoss: 304.98313044989857
iteration: 54 HingeLoss: 1432.3901163816586
iteration: 55 HingeLoss: 207.9884652192334
iteration: 56 HingeLoss: 109.89957079381482
iteration: 57 HingeLoss: 58.07012253267898
iteration: 58 HingeLoss: 30.68382439169758
iteration: 59 HingeLoss: 16.213106469177976
iteration: 60 HingeLoss: 8.566885862246904
iteration: 61 HingeLoss: 4.5266792959318
iteration: 62 HingeLoss: 2.391863948896282

```

# Output\_hinge\_train.txt

```

iteration: 63 HingeLoss: 1.2638432669995614
iteration: 64 HingeLoss: 0.6678054595359376
iteration: 65 HingeLoss: 0.3528634787482391
iteration: 66 HingeLoss: 0.1864504592712279
iteration: 67 HingeLoss: 0.09851904732610503
iteration: 68 HingeLoss: 0.05205673788083343
iteration: 69 HingeLoss: 0.027506396299426507
iteration: 70 HingeLoss: 0.014534176903537283
iteration: 71 HingeLoss: 0.134883229678592
iteration: 72 HingeLoss: 3687.0116699530795
iteration: 73 HingeLoss: 1292.2424510178873
iteration: 74 HingeLoss: 750.5590970544279
iteration: 75 HingeLoss: 440.12632574767093
iteration: 76 HingeLoss: 176.85442125078762
iteration: 77 HingeLoss: 93.44857162133026
iteration: 78 HingeLoss: 49.37753592082165
iteration: 79 HingeLoss: 26.09072574690388
iteration: 80 HingeLoss: 13.786147026285738
iteration: 81 HingeLoss: 7.284498395101983
iteration: 82 HingeLoss: 3.8490752178304457
iteration: 83 HingeLoss: 2.0338229523776405
iteration: 84 HingeLoss: 1.0746570455304398
iteration: 85 HingeLoss: 0.56784085564483
iteration: 86 HingeLoss: 0.30004291944161415
iteration: 87 HingeLoss: 0.15854046536474606
iteration: 88 HingeLoss: 0.08377161242413961
iteration: 89 HingeLoss: 0.22582644956244793
iteration: 90 HingeLoss: 2952.0881763017214
iteration: 91 HingeLoss: 590.2789259876981
iteration: 92 HingeLoss: 249.2593773179621
iteration: 93 HingeLoss: 131.70681631167892
iteration: 94 HingeLoss: 69.59291020305493
iteration: 95 HingeLoss: 36.77238039881926
iteration: 96 HingeLoss: 19.43025455107505
iteration: 97 HingeLoss: 10.266803177411257
iteration: 98 HingeLoss: 5.424903065815461
iteration: 99 HingeLoss: 2.866478763150358
[-0.0152364 -0.00221758 -0.00875751 ... 0.01126168 0.00065616
0.00090526]

```

## CROSS VALIDATION 8

```

iteration: 0 HingeLoss: 2078.578783223456
iteration: 1 HingeLoss: 1751.078440858668
iteration: 2 HingeLoss: 266.4920275392662
iteration: 3 HingeLoss: 140.81242157187913
iteration: 4 HingeLoss: 74.4042448549988
iteration: 5 HingeLoss: 39.31465413807053
iteration: 6 HingeLoss: 20.77357324179957
iteration: 7 HingeLoss: 10.976602864592573
iteration: 8 HingeLoss: 5.799955984680875
iteration: 9 HingeLoss: 3.0646539588989783
iteration: 10 HingeLoss: 1.6193405454458722
iteration: 11 HingeLoss: 0.8556475991393889

```

# Output\_hinge\_train.txt

```

iteration: 12 HingeLoss: 0.45211787969615336
iteration: 13 HingeLoss: 0.2388957525814855
iteration: 14 HingeLoss: 0.12623075344825802
iteration: 15 HingeLoss: 0.06669939898023039
iteration: 16 HingeLoss: 0.0352434704126798
iteration: 17 HingeLoss: 0.018622389792411678
iteration: 18 HingeLoss: 0.009839933398152253
iteration: 19 HingeLoss: 6547.74645817778
iteration: 20 HingeLoss: 753.082862747289
iteration: 21 HingeLoss: 281.5754205483293
iteration: 22 HingeLoss: 148.78237517513892
iteration: 23 HingeLoss: 78.61550954855575
iteration: 24 HingeLoss: 41.53985533772948
iteration: 25 HingeLoss: 21.949353141490786
iteration: 26 HingeLoss: 11.597876290442679
iteration: 27 HingeLoss: 6.128232280073312
iteration: 28 HingeLoss: 3.2381127318524894
iteration: 29 HingeLoss: 1.7109948815549398
iteration: 30 HingeLoss: 0.9040770742507191
iteration: 31 HingeLoss: 4501.634737973499
iteration: 32 HingeLoss: 582.0211520663055
iteration: 33 HingeLoss: 274.0555696423112
iteration: 34 HingeLoss: 144.80894142661938
iteration: 35 HingeLoss: 76.51597646589339
iteration: 36 HingeLoss: 40.430477544067706
iteration: 37 HingeLoss: 21.363166098651146
iteration: 38 HingeLoss: 11.28813938101808
iteration: 39 HingeLoss: 5.964569581909324
iteration: 40 HingeLoss: 3.1516345694014105
iteration: 41 HingeLoss: 1.6653004584224171
iteration: 42 HingeLoss: 0.8799324781326506
iteration: 43 HingeLoss: 0.5978075840505661
iteration: 44 HingeLoss: 3971.3824943589652
iteration: 45 HingeLoss: 559.2997367537384
iteration: 46 HingeLoss: 270.3170540638093
iteration: 47 HingeLoss: 142.8335373721192
iteration: 48 HingeLoss: 75.47218753507406
iteration: 49 HingeLoss: 39.87894717253739
iteration: 50 HingeLoss: 21.071741518701284
iteration: 51 HingeLoss: 11.134152782667538
iteration: 52 HingeLoss: 5.883204199223873
iteration: 53 HingeLoss: 3.1086417013825973
iteration: 54 HingeLoss: 1.6425833440983977
iteration: 55 HingeLoss: 0.8679289224967548
iteration: 56 HingeLoss: 0.45860724036493816
iteration: 57 HingeLoss: 0.2423246828900676
iteration: 58 HingeLoss: 0.12804257492979002
iteration: 59 HingeLoss: 0.1669958037624144
iteration: 60 HingeLoss: 4375.620517830901
iteration: 61 HingeLoss: 1744.2540101682446
iteration: 62 HingeLoss: 379.6028420889296
iteration: 63 HingeLoss: 251.5963851930425

```

# Output\_hinge\_train.txt

```

iteration: 64 HingeLoss: 132.9416740339202
iteration: 65 HingeLoss: 70.24539991455264
iteration: 66 HingeLoss: 37.11715114928079
iteration: 67 HingeLoss: 19.612428872415645
iteration: 68 HingeLoss: 10.363062744997768
iteration: 69 HingeLoss: 5.475765911268959
iteration: 70 HingeLoss: 2.893354315497933
iteration: 71 HingeLoss: 1.5288270774654975
iteration: 72 HingeLoss: 0.8078209503316407
iteration: 73 HingeLoss: 0.42684663125967054
iteration: 74 HingeLoss: 0.22554261132114747
iteration: 75 HingeLoss: 0.11917505210581344
iteration: 76 HingeLoss: 0.0699680598990263
iteration: 77 HingeLoss: 4471.191425375966
iteration: 78 HingeLoss: 445.7517069055338
iteration: 79 HingeLoss: 235.53191383902995
iteration: 80 HingeLoss: 124.45332587011904
iteration: 81 HingeLoss: 65.7602193591458
iteration: 82 HingeLoss: 34.747214828762196
iteration: 83 HingeLoss: 18.360172002501585
iteration: 84 HingeLoss: 9.70137945221469
iteration: 85 HingeLoss: 5.126137340272735
iteration: 86 HingeLoss: 2.7086131576205568
iteration: 87 HingeLoss: 1.431211212387232
iteration: 88 HingeLoss: 0.7562414472882371
iteration: 89 HingeLoss: 0.5371573793062079
iteration: 90 HingeLoss: 4097.265290073523
iteration: 91 HingeLoss: 568.215176625062
iteration: 92 HingeLoss: 270.54774045090704
iteration: 93 HingeLoss: 142.9554303574022
iteration: 94 HingeLoss: 75.53659488935337
iteration: 95 HingeLoss: 39.9129795434374
iteration: 96 HingeLoss: 21.089723972444865
iteration: 97 HingeLoss: 11.143654578577989
iteration: 98 HingeLoss: 5.8882248780929025
iteration: 99 HingeLoss: 3.111294591061928
[-0.00318819 -0.00247073 -0.00676575 ... 0.00820539 0.00386622
0.00111001]

```

## CROSS VALIDATION 9

```

iteration: 0 HingeLoss: 2162.0828889949084
iteration: 1 HingeLoss: 422.318465865116
iteration: 2 HingeLoss: 296.7348416819399
iteration: 3 HingeLoss: 156.79250147858752
iteration: 4 HingeLoss: 82.84800120055841
iteration: 5 HingeLoss: 43.77627270565032
iteration: 6 HingeLoss: 23.131059581755455
iteration: 7 HingeLoss: 12.222281256614647
iteration: 8 HingeLoss: 6.458163258272003
iteration: 9 HingeLoss: 3.41244582699505
iteration: 10 HingeLoss: 1.8031112030592582
iteration: 11 HingeLoss: 0.9527506590370618
iteration: 12 HingeLoss: 0.5034264202648422

```

Output\_hinge\_train.txt

iteration: 13 HingeLoss: 0.26600680694025614  
iteration: 14 HingeLoss: 0.1405560345865947  
iteration: 15 HingeLoss: 0.07426877186321446  
iteration: 16 HingeLoss: 0.03924307120852893  
iteration: 17 HingeLoss: 0.020735749349861658  
iteration: 18 HingeLoss: 0.010956616999100723  
iteration: 19 HingeLoss: 0.0057893956007808245  
iteration: 20 HingeLoss: 0.003059073929944918  
iteration: 21 HingeLoss: 0.02314351159644292  
iteration: 22 HingeLoss: 3443.8148689805075  
iteration: 23 HingeLoss: 352.2823499246427  
iteration: 24 HingeLoss: 186.14339508753952  
iteration: 25 HingeLoss: 98.35679687650463  
iteration: 26 HingeLoss: 51.97100594010589  
iteration: 27 HingeLoss: 27.46109617434817  
iteration: 28 HingeLoss: 14.510240651602516  
iteration: 29 HingeLoss: 7.667104125438858  
iteration: 30 HingeLoss: 4.051241263447231  
iteration: 31 HingeLoss: 2.140645999602631  
iteration: 32 HingeLoss: 1.1311015557033446  
iteration: 33 HingeLoss: 0.5976657184569614  
iteration: 34 HingeLoss: 0.315802156948284  
iteration: 35 HingeLoss: 0.1668675302151705  
iteration: 36 HingeLoss: 0.08817157206646536  
iteration: 37 HingeLoss: 0.04658920828184656  
iteration: 38 HingeLoss: 0.024617393990583207  
iteration: 39 HingeLoss: 4432.130739461093  
iteration: 40 HingeLoss: 2529.1509843442036  
iteration: 41 HingeLoss: 1452.9188791142237  
iteration: 42 HingeLoss: 275.87000673247127  
iteration: 43 HingeLoss: 145.76767660085514  
iteration: 44 HingeLoss: 77.02256505984438  
iteration: 45 HingeLoss: 40.69815522025794  
iteration: 46 HingeLoss: 21.50460500822426  
iteration: 47 HingeLoss: 11.362874657511624  
iteration: 48 HingeLoss: 6.004059150723354  
iteration: 49 HingeLoss: 3.172500566267726  
iteration: 50 HingeLoss: 1.6763258972484407  
iteration: 51 HingeLoss: 0.8857582386791139  
iteration: 52 HingeLoss: 0.4680281195176502  
iteration: 53 HingeLoss: 0.2473026059411951  
iteration: 54 HingeLoss: 0.3175927554664416  
iteration: 55 HingeLoss: 3916.565859411557  
iteration: 56 HingeLoss: 924.4305445346283  
iteration: 57 HingeLoss: 269.6353764170859  
iteration: 58 HingeLoss: 142.4733439319894  
iteration: 59 HingeLoss: 75.28186397827831  
iteration: 60 HingeLoss: 39.77838160904927  
iteration: 61 HingeLoss: 21.018603416776575  
iteration: 62 HingeLoss: 11.106075001584015  
iteration: 63 HingeLoss: 5.8683681068152405  
iteration: 64 HingeLoss: 3.1008024195923927

# Output\_hinge\_train.txt

```

iteration: 65 HingeLoss: 1.638441125426958
iteration: 66 HingeLoss: 0.8657402047058639
iteration: 67 HingeLoss: 0.45745073802932024
iteration: 68 HingeLoss: 0.24171359558687266
iteration: 69 HingeLoss: 0.1277196809064706
iteration: 70 HingeLoss: 0.06748613726606852
iteration: 71 HingeLoss: 0.062062201999524294
iteration: 72 HingeLoss: 1167.2095194929996
iteration: 73 HingeLoss: 1157.534718427312
iteration: 74 HingeLoss: 250.08637362423988
iteration: 75 HingeLoss: 132.1437950595734
iteration: 76 HingeLoss: 69.82380655006627
iteration: 77 HingeLoss: 36.89438432537189
iteration: 78 HingeLoss: 19.494720525902867
iteration: 79 HingeLoss: 10.300866522976657
iteration: 80 HingeLoss: 5.442901886343769
iteration: 81 HingeLoss: 2.8759892071491207
iteration: 82 HingeLoss: 1.519651482307799
iteration: 83 HingeLoss: 0.8029726335341401
iteration: 84 HingeLoss: 0.4242848164275062
iteration: 85 HingeLoss: 0.22418896726107243
iteration: 86 HingeLoss: 0.11845979656963251
iteration: 87 HingeLoss: 0.06259328268806973
iteration: 88 HingeLoss: 0.033073828852690924
iteration: 89 HingeLoss: 0.01747596719648614
iteration: 90 HingeLoss: 0.00923417215505762
iteration: 91 HingeLoss: 12764.070095551884
iteration: 92 HingeLoss: 6674.237253645267
iteration: 93 HingeLoss: 1695.4491113284944
iteration: 94 HingeLoss: 346.18180120959573
iteration: 95 HingeLoss: 267.4311232065995
iteration: 96 HingeLoss: 141.308632795254
iteration: 97 HingeLoss: 74.66643920512524
iteration: 98 HingeLoss: 39.453195698599345
iteration: 99 HingeLoss: 20.846777580430434
[-0.04628441 0.00230924 -0.01988681 ... 0.01624547 0.00941025
 0.00503565]

```

## CROSS VALIDATION 10

```

iteration: 0 HingeLoss: 1443.9556081325031
iteration: 1 HingeLoss: 342.44245611477555
iteration: 2 HingeLoss: 180.94406778243496
iteration: 3 HingeLoss: 95.60951068135317
iteration: 4 HingeLoss: 50.51936017995919
iteration: 5 HingeLoss: 26.69405726275939
iteration: 6 HingeLoss: 14.104942948785647
iteration: 7 HingeLoss: 7.452947808951097
iteration: 8 HingeLoss: 3.938082645540315
iteration: 9 HingeLoss: 2.080853820615768
iteration: 10 HingeLoss: 1.0995078093840147
iteration: 11 HingeLoss: 0.5809718159532662
iteration: 12 HingeLoss: 0.3069812220079929
iteration: 13 HingeLoss: 0.16220661326039448

```

Output\_hinge\_train.txt

iteration: 14 HingeLoss: 0.08570877792884067  
iteration: 15 HingeLoss: 0.04528788602633978  
iteration: 16 HingeLoss: 0.02392978490998402  
iteration: 17 HingeLoss: 0.15806062664349443  
iteration: 18 HingeLoss: 1842.3993515853324  
iteration: 19 HingeLoss: 1472.652014224209  
iteration: 20 HingeLoss: 293.92976342609535  
iteration: 21 HingeLoss: 155.31031881987406  
iteration: 22 HingeLoss: 82.0648268170225  
iteration: 23 HingeLoss: 43.36244913847996  
iteration: 24 HingeLoss: 22.912398261434422  
iteration: 25 HingeLoss: 12.106742227913415  
iteration: 26 HingeLoss: 6.397113287780534  
iteration: 27 HingeLoss: 3.3801874729227914  
iteration: 28 HingeLoss: 1.7860661267213982  
iteration: 29 HingeLoss: 0.9437441664332334  
iteration: 30 HingeLoss: 0.4986674560094203  
iteration: 31 HingeLoss: 0.2634922053322167  
iteration: 32 HingeLoss: 0.1392273376458789  
iteration: 33 HingeLoss: 0.0735666982008803  
iteration: 34 HingeLoss: 0.03887210066420172  
iteration: 35 HingeLoss: 0.020539731250705358  
iteration: 36 HingeLoss: 0.010853042481435086  
iteration: 37 HingeLoss: 0.005734667589664287  
iteration: 38 HingeLoss: 0.003030156052572408  
iteration: 39 HingeLoss: 0.057733762799001186  
iteration: 40 HingeLoss: 2879.496035521217  
iteration: 41 HingeLoss: 1783.0287166241517  
iteration: 42 HingeLoss: 366.6880156172159  
iteration: 43 HingeLoss: 193.75524257602495  
iteration: 44 HingeLoss: 102.37884094058663  
iteration: 45 HingeLoss: 54.09622435493724  
iteration: 46 HingeLoss: 28.584045908060034  
iteration: 47 HingeLoss: 15.103599007451134  
iteration: 48 HingeLoss: 7.980630303758177  
iteration: 49 HingeLoss: 4.216906183343625  
iteration: 50 HingeLoss: 2.228182121247716  
iteration: 51 HingeLoss: 1.1773549966699375  
iteration: 52 HingeLoss: 0.6221056954749539  
iteration: 53 HingeLoss: 0.3287160605229697  
iteration: 54 HingeLoss: 0.1736911416045555  
iteration: 55 HingeLoss: 0.09177711799021046  
iteration: 56 HingeLoss: 0.048494352151624606  
iteration: 57 HingeLoss: 0.20235921232953555  
iteration: 58 HingeLoss: 1695.6878280945566  
iteration: 59 HingeLoss: 1890.3942720810926  
iteration: 60 HingeLoss: 227.23892058092468  
iteration: 61 HingeLoss: 120.07136940584545  
iteration: 62 HingeLoss: 63.44482588694896  
iteration: 63 HingeLoss: 33.523777997565745  
iteration: 64 HingeLoss: 17.713717005585725  
iteration: 65 HingeLoss: 9.35979740042309

# Output\_hinge\_train.txt

```

iteration: 66 HingeLoss: 4.945647903787892
iteration: 67 HingeLoss: 2.6132438707632617
iteration: 68 HingeLoss: 1.3808187847038922
iteration: 69 HingeLoss: 0.7296144602203734
iteration: 70 HingeLoss: 0.3855228987754701
iteration: 71 HingeLoss: 0.20370745590123
iteration: 72 HingeLoss: 4686.936041858304
iteration: 73 HingeLoss: 1332.4601577911546
iteration: 74 HingeLoss: 553.1664692128217
iteration: 75 HingeLoss: 309.4229202366086
iteration: 76 HingeLoss: 189.03724960569224
iteration: 77 HingeLoss: 99.88588825736328
iteration: 78 HingeLoss: 52.7789665464008
iteration: 79 HingeLoss: 27.888016598788674
iteration: 80 HingeLoss: 14.735822254696076
iteration: 81 HingeLoss: 7.786299780509591
iteration: 82 HingeLoss: 4.114223368339217
iteration: 83 HingeLoss: 2.173925279239724
iteration: 84 HingeLoss: 1.1486860815787998
iteration: 85 HingeLoss: 0.6069572522172022
iteration: 86 HingeLoss: 0.32071173484814663
iteration: 87 HingeLoss: 0.16946171496193033
iteration: 88 HingeLoss: 0.08954232015063558
iteration: 89 HingeLoss: 0.04731350145819153
iteration: 90 HingeLoss: 0.02500010516221138
iteration: 91 HingeLoss: 0.013209871154302812
iteration: 92 HingeLoss: 0.006979998475248261
iteration: 93 HingeLoss: 0.00368817970632503
iteration: 94 HingeLoss: 0.0019488069509447812
iteration: 95 HingeLoss: 0.0010297352174943072
iteration: 96 HingeLoss: 0.021843514131627346
iteration: 97 HingeLoss: 5784.815810574433
iteration: 98 HingeLoss: 1459.4225112244958
iteration: 99 HingeLoss: 479.5154512299042
[-0.25521193 -0.10938736 -0.09967236 ... 0.07720335 -0.03730265
 0.00601417]

```

## CROSS VALIDATION 11

```

iteration: 0 HingeLoss: 2389.5071552005475
iteration: 1 HingeLoss: 422.818270999481
iteration: 2 HingeLoss: 296.83786776629785
iteration: 3 HingeLoss: 156.84693970158975
iteration: 4 HingeLoss: 82.87676595602896
iteration: 5 HingeLoss: 43.791471790257575
iteration: 6 HingeLoss: 23.13909066594582
iteration: 7 HingeLoss: 12.226524822259494
iteration: 8 HingeLoss: 6.4604055270560545
iteration: 9 HingeLoss: 3.413630625280435
iteration: 10 HingeLoss: 1.8037372417335849
iteration: 11 HingeLoss: 0.9530814532545983
iteration: 12 HingeLoss: 0.5036012094892832
iteration: 13 HingeLoss: 0.26609916427711716
iteration: 14 HingeLoss: 0.14060483552211772

```



Output\_hinge\_train.txt

iteration: 15 HingeLoss: 0.07429455791756442  
iteration: 16 HingeLoss: 0.0392566963694365  
iteration: 17 HingeLoss: 0.020742948784379146  
iteration: 18 HingeLoss: 0.22871932099281833  
iteration: 19 HingeLoss: 1222.5563237375966  
iteration: 20 HingeLoss: 1910.268887579142  
iteration: 21 HingeLoss: 1335.0502538143405  
iteration: 22 HingeLoss: 176.90710954640875  
iteration: 23 HingeLoss: 93.47641172808093  
iteration: 24 HingeLoss: 49.392246427866034  
iteration: 25 HingeLoss: 26.098498670313976  
iteration: 26 HingeLoss: 13.790254181678632  
iteration: 27 HingeLoss: 7.28666858571513  
iteration: 28 HingeLoss: 3.850221930542013  
iteration: 29 HingeLoss: 2.034428866915699  
iteration: 30 HingeLoss: 1.0749772063028187  
iteration: 31 HingeLoss: 0.5680100262352875  
iteration: 32 HingeLoss: 0.3001323079337239  
iteration: 33 HingeLoss: 0.1585876975846022  
iteration: 34 HingeLoss: 0.08379656958070289  
iteration: 35 HingeLoss: 0.044277489240598905  
iteration: 36 HingeLoss: 0.02339589870159585  
iteration: 37 HingeLoss: 0.0435374636940184  
iteration: 38 HingeLoss: 6132.903085121049  
iteration: 39 HingeLoss: 480.9698847843307  
iteration: 40 HingeLoss: 254.14093924310814  
iteration: 41 HingeLoss: 134.28619762405845  
iteration: 42 HingeLoss: 70.95583626169618  
iteration: 43 HingeLoss: 37.49254047457389  
iteration: 44 HingeLoss: 19.810781822839164  
iteration: 45 HingeLoss: 10.467870980849947  
iteration: 46 HingeLoss: 5.531145809974739  
iteration: 47 HingeLoss: 2.922616645463949  
iteration: 48 HingeLoss: 1.5442890767658064  
iteration: 49 HingeLoss: 0.8159909567064028  
iteration: 50 HingeLoss: 9449.748607126192  
iteration: 51 HingeLoss: 1096.193777071731  
iteration: 52 HingeLoss: 1572.4636032467831  
iteration: 53 HingeLoss: 305.98158279579695  
iteration: 54 HingeLoss: 1106.6851762903373  
iteration: 55 HingeLoss: 208.01045027326077  
iteration: 56 HingeLoss: 109.91118753419006  
iteration: 57 HingeLoss: 58.07626073260227  
iteration: 58 HingeLoss: 30.687067771258597  
iteration: 59 HingeLoss: 16.214820247013204  
iteration: 60 HingeLoss: 8.567791409813344  
iteration: 61 HingeLoss: 4.527157780586133  
iteration: 62 HingeLoss: 2.3921167766580873  
iteration: 63 HingeLoss: 1.2639768593239138  
iteration: 64 HingeLoss: 0.667876048734681  
iteration: 65 HingeLoss: 0.3529007775601535  
iteration: 66 HingeLoss: 0.18647016768830857

# Output\_hinge\_train.txt

```

iteration: 67 HingeLoss: 0.09852946110831123
iteration: 68 HingeLoss: 0.05206224044653388
iteration: 69 HingeLoss: 0.02750930381455291
iteration: 70 HingeLoss: 0.014535713213082772
iteration: 71 HingeLoss: 0.13506627857585568
iteration: 72 HingeLoss: 3687.017493647686
iteration: 73 HingeLoss: 1572.674222478256
iteration: 74 HingeLoss: 313.8944318278354
iteration: 75 HingeLoss: 165.85950233386995
iteration: 76 HingeLoss: 87.63893756970924
iteration: 77 HingeLoss: 46.30776814274184
iteration: 78 HingeLoss: 309.03720567451717
iteration: 79 HingeLoss: 1252.2355006948746
iteration: 80 HingeLoss: 184.18868528080552
iteration: 81 HingeLoss: 97.32394263355378
iteration: 82 HingeLoss: 51.42525337698554
iteration: 83 HingeLoss: 27.1727245457421
iteration: 84 HingeLoss: 14.357867210221913
iteration: 85 HingeLoss: 7.586591122996857
iteration: 86 HingeLoss: 4.008698786861474
iteration: 87 HingeLoss: 2.1181668687895225
iteration: 88 HingeLoss: 1.119223748799127
iteration: 89 HingeLoss: 0.5913895729054789
iteration: 90 HingeLoss: 0.312485887934902
iteration: 91 HingeLoss: 0.16511523813097553
iteration: 92 HingeLoss: 0.08724567385496874
iteration: 93 HingeLoss: 0.04609997049678485
iteration: 94 HingeLoss: 0.02435888435382173
iteration: 95 HingeLoss: 0.21295311995803248
iteration: 96 HingeLoss: 3375.4108207964186
iteration: 97 HingeLoss: 825.4890184501655
iteration: 98 HingeLoss: 286.54176855816735
iteration: 99 HingeLoss: 151.40655682924458
[-0.08338581 -0.01702653 -0.01186858 ... 0.00241714 0.03031263
0.01379742]

```

## CROSS VALIDATION 12

```

iteration: 0 HingeLoss: 1635.3560782876223
iteration: 1 HingeLoss: 1014.661083197347
iteration: 2 HingeLoss: 455.2172709936054
iteration: 3 HingeLoss: 303.8880133227385
iteration: 4 HingeLoss: 160.5721846081766
iteration: 5 HingeLoss: 84.8451578853804
iteration: 6 HingeLoss: 44.83155556587326
iteration: 7 HingeLoss: 23.688663260797608
iteration: 8 HingeLoss: 12.516914927453987
iteration: 9 HingeLoss: 6.61384551657666
iteration: 10 HingeLoss: 3.4947071838922175
iteration: 11 HingeLoss: 1.846577497242381
iteration: 12 HingeLoss: 0.9757179282540721
iteration: 13 HingeLoss: 0.5155621559009259
iteration: 14 HingeLoss: 0.27241924013104407
iteration: 15 HingeLoss: 0.1439443169832592

```

Output\_hinge\_train.txt

iteration: 16 HingeLoss: 0.0760591152879287  
iteration: 17 HingeLoss: 0.0401890754676701  
iteration: 18 HingeLoss: 0.021235611022186355  
iteration: 19 HingeLoss: 0.011220740219524792  
iteration: 20 HingeLoss: 0.00592895636214655  
iteration: 21 HingeLoss: 0.0031328168067798635  
iteration: 22 HingeLoss: 0.00165535729146252  
iteration: 23 HingeLoss: 0.23195314434706665  
iteration: 24 HingeLoss: 2734.726486701937  
iteration: 25 HingeLoss: 1018.9393039687216  
iteration: 26 HingeLoss: 254.25817362073124  
iteration: 27 HingeLoss: 134.34814340441443  
iteration: 28 HingeLoss: 70.98856795509292  
iteration: 29 HingeLoss: 37.50983565991921  
iteration: 30 HingeLoss: 19.81992047119759  
iteration: 31 HingeLoss: 10.472699775231263  
iteration: 32 HingeLoss: 5.533697309306195  
iteration: 33 HingeLoss: 2.923964838889541  
iteration: 34 HingeLoss: 1.5450014522269337  
iteration: 35 HingeLoss: 0.8163673706452215  
iteration: 36 HingeLoss: 0.43136249671065136  
iteration: 37 HingeLoss: 0.22792876131414003  
iteration: 38 HingeLoss: 0.12043587616066252  
iteration: 39 HingeLoss: 0.06363742856740828  
iteration: 40 HingeLoss: 0.03362554783318575  
iteration: 41 HingeLoss: 0.01776749143602159  
iteration: 42 HingeLoss: 0.009388211412798036  
iteration: 43 HingeLoss: 0.0049606616583306945  
iteration: 44 HingeLoss: 5256.413561109505  
iteration: 45 HingeLoss: 2752.07599726833  
iteration: 46 HingeLoss: 332.29818127219056  
iteration: 47 HingeLoss: 175.5839077849109  
iteration: 48 HingeLoss: 92.77724167791034  
iteration: 49 HingeLoss: 49.022810130787526  
iteration: 50 HingeLoss: 25.903291256086522  
iteration: 51 HingeLoss: 13.687108023949389  
iteration: 52 HingeLoss: 7.232166916829188  
iteration: 53 HingeLoss: 3.821423650734528  
iteration: 54 HingeLoss: 2.0192120682960915  
iteration: 55 HingeLoss: 1.0669367621590136  
iteration: 56 HingeLoss: 0.5637615148600802  
iteration: 57 HingeLoss: 0.29788742586223144  
iteration: 58 HingeLoss: 0.15740151845741013  
iteration: 59 HingeLoss: 0.08316980127975128  
iteration: 60 HingeLoss: 0.04394630949373583  
iteration: 61 HingeLoss: 0.023220905766302563  
iteration: 62 HingeLoss: 0.15964528495728497  
iteration: 63 HingeLoss: 2130.64694688297  
iteration: 64 HingeLoss: 2331.9700025148986  
iteration: 65 HingeLoss: 288.1054518022483  
iteration: 66 HingeLoss: 152.2327955208991  
iteration: 67 HingeLoss: 80.43868620721129

# Output\_hinge\_train.txt

```

iteration: 68 HingeLoss: 42.50320843549064
iteration: 69 HingeLoss: 22.458381812168504
iteration: 70 HingeLoss: 11.866843285176065
iteration: 71 HingeLoss: 6.270352456053961
iteration: 72 HingeLoss: 3.3132079844904245
iteration: 73 HingeLoss: 1.7506746591082918
iteration: 74 HingeLoss: 0.925043576011818
iteration: 75 HingeLoss: 0.48878620197574985
iteration: 76 HingeLoss: 0.2582710235899485
iteration: 77 HingeLoss: 0.13646850372733949
iteration: 78 HingeLoss: 0.07210895070887725
iteration: 79 HingeLoss: 0.050858298934967364
iteration: 80 HingeLoss: 1132.033526574033
iteration: 81 HingeLoss: 3255.8416393071625
iteration: 82 HingeLoss: 335.3955373874785
iteration: 83 HingeLoss: 177.2205279085651
iteration: 84 HingeLoss: 93.64201967871215
iteration: 85 HingeLoss: 49.47975244737162
iteration: 86 HingeLoss: 26.14473620553213
iteration: 87 HingeLoss: 13.814685754216468
iteration: 88 HingeLoss: 7.299578048424499
iteration: 89 HingeLoss: 3.8570431954109208
iteration: 90 HingeLoss: 2.0380331729553336
iteration: 91 HingeLoss: 1.0768816950269786
iteration: 92 HingeLoss: 0.5690163440286623
iteration: 93 HingeLoss: 0.30066403883263465
iteration: 94 HingeLoss: 0.15886866026927074
iteration: 95 HingeLoss: 0.08394502819075898
iteration: 96 HingeLoss: 0.04435593367504683
iteration: 97 HingeLoss: 0.023437348162112338
iteration: 98 HingeLoss: 0.012384121883135864
iteration: 99 HingeLoss: 0.0065436786515075665
[-9.72462993e-04 -1.91706300e-05 -6.02178967e-04 ... 1.88267990e-04
 5.76856044e-05 1.91454426e-05]

```

## CROSS VALIDATION 13

```

iteration: 0 HingeLoss: 2418.0579939972877
iteration: 1 HingeLoss: 420.74485684285435
iteration: 2 HingeLoss: 296.91630068786134
iteration: 3 HingeLoss: 156.88838307878314
iteration: 4 HingeLoss: 82.89866433083058
iteration: 5 HingeLoss: 43.803042729969285
iteration: 6 HingeLoss: 23.14520466513638
iteration: 7 HingeLoss: 12.229755414331846
iteration: 8 HingeLoss: 6.462112548076607
iteration: 9 HingeLoss: 3.4145326025958433
iteration: 10 HingeLoss: 1.8042138398936058
iteration: 11 HingeLoss: 0.9533332842067246
iteration: 12 HingeLoss: 0.5037342751067546
iteration: 13 HingeLoss: 0.26616947516782985
iteration: 14 HingeLoss: 0.14064198727812155
iteration: 15 HingeLoss: 0.07431418863138672
iteration: 16 HingeLoss: 0.03926706909381412

```

Output\_hinge\_train.txt

```

iteration: 17 HingeLoss: 0.020748429655425834
iteration: 18 HingeLoss: 0.23312204482997362
iteration: 19 HingeLoss: 2757.7045933527884
iteration: 20 HingeLoss: 3510.671420638746
iteration: 21 HingeLoss: 355.2723563438264
iteration: 22 HingeLoss: 187.7232924236378
iteration: 23 HingeLoss: 99.19160297477787
iteration: 24 HingeLoss: 52.41211132448181
iteration: 25 HingeLoss: 27.694173005636184
iteration: 26 HingeLoss: 14.633396729962598
iteration: 27 HingeLoss: 7.7321788887828555
iteration: 28 HingeLoss: 4.0856262883738586
iteration: 29 HingeLoss: 2.1588147931325397
iteration: 30 HingeLoss: 1.1407018121823458
iteration: 31 HingeLoss: 0.6027384231641221
iteration: 32 HingeLoss: 0.31848253669671417
iteration: 33 HingeLoss: 0.16828382310240556
iteration: 34 HingeLoss: 0.0889199307807883
iteration: 35 HingeLoss: 0.04698463550622269
iteration: 36 HingeLoss: 0.024826334819072506
iteration: 37 HingeLoss: 0.01311805218680611
iteration: 38 HingeLoss: 0.006931482010126108
iteration: 39 HingeLoss: 4474.876430076052
iteration: 40 HingeLoss: 996.6828415509015
iteration: 41 HingeLoss: 814.2977564852531
iteration: 42 HingeLoss: 509.9559658583318
iteration: 43 HingeLoss: 1517.7664063341144
iteration: 44 HingeLoss: 329.9852796491021
iteration: 45 HingeLoss: 157.84511941893314
iteration: 46 HingeLoss: 83.40419675559514
iteration: 47 HingeLoss: 44.07016233415223
iteration: 48 HingeLoss: 23.286348693577462
iteration: 49 HingeLoss: 12.304334877810428
iteration: 50 HingeLoss: 6.501519786442876
iteration: 51 HingeLoss: 3.4353550966608775
iteration: 52 HingeLoss: 1.81521629216033
iteration: 53 HingeLoss: 0.9591468988248135
iteration: 54 HingeLoss: 0.5068061461867936
iteration: 55 HingeLoss: 0.2677926291868488
iteration: 56 HingeLoss: 0.1414996498885669
iteration: 57 HingeLoss: 0.0747673712281932
iteration: 58 HingeLoss: 0.03950652743506284
iteration: 59 HingeLoss: 0.020874957676575913
iteration: 60 HingeLoss: 0.011030173652065564
iteration: 61 HingeLoss: 0.005828262393616401
iteration: 62 HingeLoss: 10946.569017035767
iteration: 63 HingeLoss: 1467.8226159038431
iteration: 64 HingeLoss: 379.8081935073533
iteration: 65 HingeLoss: 200.68784779211126
iteration: 66 HingeLoss: 106.04197839836701
iteration: 67 HingeLoss: 56.03179916647531
iteration: 68 HingeLoss: 29.606789360698798

```

# Output\_hinge\_train.txt

```

iteration: 69 HingeLoss: 15.644009103552886
iteration: 70 HingeLoss: 8.266179012200377
iteration: 71 HingeLoss: 4.367788014532906
iteration: 72 HingeLoss: 2.307906967867496
iteration: 73 HingeLoss: 1.219481017533071
iteration: 74 HingeLoss: 0.644364774156215
iteration: 75 HingeLoss: 0.34047759350393497
iteration: 76 HingeLoss: 0.1799058488726865
iteration: 77 HingeLoss: 0.09506092346786936
iteration: 78 HingeLoss: 0.0502294907430109
iteration: 79 HingeLoss: 0.02654089239049938
iteration: 80 HingeLoss: 0.014024011760104942
iteration: 81 HingeLoss: 0.10395738604715837
iteration: 82 HingeLoss: 2805.9611991357724
iteration: 83 HingeLoss: 3473.5092080246955
iteration: 84 HingeLoss: 355.11109525475223
iteration: 85 HingeLoss: 187.63808325371423
iteration: 86 HingeLoss: 99.14657907793618
iteration: 87 HingeLoss: 52.388321029509676
iteration: 88 HingeLoss: 27.68160238926215
iteration: 89 HingeLoss: 14.626754508997779
iteration: 90 HingeLoss: 7.728669188221426
iteration: 91 HingeLoss: 4.083771788486524
iteration: 92 HingeLoss: 2.1578348890718
iteration: 93 HingeLoss: 1.1401840381049186
iteration: 94 HingeLoss: 0.6024648351609729
iteration: 95 HingeLoss: 0.31833797481397363
iteration: 96 HingeLoss: 0.1682074376699267
iteration: 97 HingeLoss: 0.08887956928172407
iteration: 98 HingeLoss: 0.046963308787844
iteration: 99 HingeLoss: 0.024815065938397874
[-2.13922037e-03 -8.11278031e-04 -3.83767083e-04 ... 9.72153866e-04
 3.46121961e-04 -4.06629013e-05]

```

## CROSS VALIDATION 14

```

iteration: 0 HingeLoss: 2418.0579939972877
iteration: 1 HingeLoss: 419.0732022215891
iteration: 2 HingeLoss: 221.43518875816605
iteration: 3 HingeLoss: 117.00472032195864
iteration: 4 HingeLoss: 61.8244311321766
iteration: 5 HingeLoss: 32.66757336199462
iteration: 6 HingeLoss: 17.261304791948017
iteration: 7 HingeLoss: 9.120746123958053
iteration: 8 HingeLoss: 4.819334972666781
iteration: 9 HingeLoss: 2.5465010497068814
iteration: 10 HingeLoss: 1.3455523703864791
iteration: 11 HingeLoss: 0.710979947037946
iteration: 12 HingeLoss: 0.37567655946746187
iteration: 13 HingeLoss: 0.1985047228424531
iteration: 14 HingeLoss: 0.10488843127880063
iteration: 15 HingeLoss: 0.055422273377642925
iteration: 16 HingeLoss: 0.029284720430050006
iteration: 17 HingeLoss: 0.015473830256341256

```

Output\_hinge\_train.txt

iteration: 18 HingeLoss: 0.08294743425621444  
iteration: 19 HingeLoss: 1309.601691626686  
iteration: 20 HingeLoss: 2268.5322462965196  
iteration: 21 HingeLoss: 1339.306310684909  
iteration: 22 HingeLoss: 176.99926465514838  
iteration: 23 HingeLoss: 93.52510580775633  
iteration: 24 HingeLoss: 49.417976020374354  
iteration: 25 HingeLoss: 26.112093997200915  
iteration: 26 HingeLoss: 13.79743785211968  
iteration: 27 HingeLoss: 7.2904643841858  
iteration: 28 HingeLoss: 3.8522276024541835  
iteration: 29 HingeLoss: 2.035488649159243  
iteration: 30 HingeLoss: 1.0755371874228168  
iteration: 31 HingeLoss: 0.5683059161283905  
iteration: 32 HingeLoss: 0.30028865397060656  
iteration: 33 HingeLoss: 0.15867030967720352  
iteration: 34 HingeLoss: 0.08384022120104487  
iteration: 35 HingeLoss: 0.04430055443479119  
iteration: 36 HingeLoss: 0.023408086180066536  
iteration: 37 HingeLoss: 0.03621319495724309  
iteration: 38 HingeLoss: 5276.472887513586  
iteration: 39 HingeLoss: 849.1252173333405  
iteration: 40 HingeLoss: 934.3921231601223  
iteration: 41 HingeLoss: 1006.8506542798486  
iteration: 42 HingeLoss: 137.0852728520954  
iteration: 43 HingeLoss: 72.4348469647975  
iteration: 44 HingeLoss: 38.274038820162254  
iteration: 45 HingeLoss: 20.223719783921318  
iteration: 46 HingeLoss: 10.686064353446682  
iteration: 47 HingeLoss: 5.646437578550268  
iteration: 48 HingeLoss: 2.9835359655289095  
iteration: 49 HingeLoss: 1.5764783961164408  
iteration: 50 HingeLoss: 0.8329995556065916  
iteration: 51 HingeLoss: 0.440150820556838  
iteration: 52 HingeLoss: 0.2325724468073471  
iteration: 53 HingeLoss: 0.12288956532110218  
iteration: 54 HingeLoss: 0.0649339398201334  
iteration: 55 HingeLoss: 0.03431061481540347  
iteration: 56 HingeLoss: 0.018129475776025177  
iteration: 57 HingeLoss: 0.009579481267876505  
iteration: 58 HingeLoss: 0.0050617272388510486  
iteration: 59 HingeLoss: 3757.554195749462  
iteration: 60 HingeLoss: 1691.337748785032  
iteration: 61 HingeLoss: 238.5013745830465  
iteration: 62 HingeLoss: 126.02236702301433  
iteration: 63 HingeLoss: 66.5892891302952  
iteration: 64 HingeLoss: 35.18528918019993  
iteration: 65 HingeLoss: 18.59164725834348  
iteration: 66 HingeLoss: 9.823689269923085  
iteration: 67 HingeLoss: 5.190764945730823  
iteration: 68 HingeLoss: 2.7427619076187337  
iteration: 69 HingeLoss: 1.449255159987832

# Output\_hinge\_train.txt

```

iteration: 70 HingeLoss: 0.7657757360991174
iteration: 71 HingeLoss: 0.40463025020595317
iteration: 72 HingeLoss: 0.21380363945161718
iteration: 73 HingeLoss: 0.11297226596254253
iteration: 74 HingeLoss: 0.05969371199408231
iteration: 75 HingeLoss: 0.031541717086686745
iteration: 76 HingeLoss: 0.01666641064096018
iteration: 77 HingeLoss: 0.008806408442815971
iteration: 78 HingeLoss: 0.004653241260664897
iteration: 79 HingeLoss: 6009.487560084013
iteration: 80 HingeLoss: 1083.6593698814886
iteration: 81 HingeLoss: 454.3314660758467
iteration: 82 HingeLoss: 1072.5537931261033
iteration: 83 HingeLoss: 197.02577547235978
iteration: 84 HingeLoss: 104.10696639790658
iteration: 85 HingeLoss: 55.009353099058416
iteration: 86 HingeLoss: 29.066536400754597
iteration: 87 HingeLoss: 15.358543424697235
iteration: 88 HingeLoss: 8.115341053232152
iteration: 89 HingeLoss: 4.288086349671111
iteration: 90 HingeLoss: 2.2657931960742808
iteration: 91 HingeLoss: 1.1972284111699991
iteration: 92 HingeLoss: 0.6326066611004377
iteration: 93 HingeLoss: 0.3342646932990464
iteration: 94 HingeLoss: 0.17662299823391497
iteration: 95 HingeLoss: 0.09332628940630786
iteration: 96 HingeLoss: 0.049312922900419255
iteration: 97 HingeLoss: 0.026056584703541538
iteration: 98 HingeLoss: 0.013768107150814666
iteration: 99 HingeLoss: 0.007274966257974311
[-8.40485110e-04  4.63848216e-05 -1.69513999e-04 ...  1.72376674e-04
 2.71512138e-04  6.76289138e-06]

```

## CROSS VALIDATION 15

```

iteration: 0 HingeLoss: 2418.0579939972877
iteration: 1 HingeLoss: 420.74485684285435
iteration: 2 HingeLoss: 297.26692433461255
iteration: 3 HingeLoss: 157.0736500273492
iteration: 4 HingeLoss: 82.99655801983029
iteration: 5 HingeLoss: 43.85476903312339
iteration: 6 HingeLoss: 23.17253646216366
iteration: 7 HingeLoss: 12.244197334267911
iteration: 8 HingeLoss: 6.469743552039923
iteration: 9 HingeLoss: 3.418564768799921
iteration: 10 HingeLoss: 1.8063444067725436
iteration: 11 HingeLoss: 0.9544590600294173
iteration: 12 HingeLoss: 0.5043291267471742
iteration: 13 HingeLoss: 0.266483790386701
iteration: 14 HingeLoss: 0.14080806912122526
iteration: 15 HingeLoss: 0.07440194505217912
iteration: 16 HingeLoss: 0.039313438939225134
iteration: 17 HingeLoss: 0.020772931139693588
iteration: 18 HingeLoss: 0.23507371620612466

```



# Output\_hinge\_train.txt

```

iteration: 19 HingeLoss: 1312.1317915422164
iteration: 20 HingeLoss: 2269.773798506332
iteration: 21 HingeLoss: 1335.7109718816737
iteration: 22 HingeLoss: 177.01068560536265
iteration: 23 HingeLoss: 93.53114055360287
iteration: 24 HingeLoss: 49.42116473556434
iteration: 25 HingeLoss: 26.11377889078572
iteration: 26 HingeLoss: 13.798328137461269
iteration: 27 HingeLoss: 7.290934804393098
iteration: 28 HingeLoss: 3.8524761690216627
iteration: 29 HingeLoss: 2.0356199898999456
iteration: 30 HingeLoss: 1.075606586901369
iteration: 31 HingeLoss: 0.5683425863009323
iteration: 32 HingeLoss: 0.30030803021927943
iteration: 33 HingeLoss: 0.15868054794407335
iteration: 34 HingeLoss: 0.08384563102573625
iteration: 35 HingeLoss: 0.04430341294625253
iteration: 36 HingeLoss: 0.023409596596436877
iteration: 37 HingeLoss: 0.040262274698429856
iteration: 38 HingeLoss: 6132.728087731338
iteration: 39 HingeLoss: 481.66380449808526
iteration: 40 HingeLoss: 254.50760130115347
iteration: 41 HingeLoss: 134.47993915084487
iteration: 42 HingeLoss: 71.05820785531479
iteration: 43 HingeLoss: 37.546632869497365
iteration: 44 HingeLoss: 19.839363845303875
iteration: 45 HingeLoss: 10.48297351068486
iteration: 46 HingeLoss: 5.539125875335613
iteration: 47 HingeLoss: 2.92683325313564
iteration: 48 HingeLoss: 1.5465171011556988
iteration: 49 HingeLoss: 8531.28559546884
iteration: 50 HingeLoss: 1029.1750600244986
iteration: 51 HingeLoss: 1556.7309882844681
iteration: 52 HingeLoss: 254.23940701298375
iteration: 53 HingeLoss: 1390.5842433942514
iteration: 54 HingeLoss: 208.98375501653157
iteration: 55 HingeLoss: 110.4254745809467
iteration: 56 HingeLoss: 58.348006214467325
iteration: 57 HingeLoss: 30.830656079344088
iteration: 58 HingeLoss: 16.290691249825652
iteration: 59 HingeLoss: 8.607881088036581
iteration: 60 HingeLoss: 4.548340870837564
iteration: 61 HingeLoss: 2.4033097652897664
iteration: 62 HingeLoss: 1.2698911519517522
iteration: 63 HingeLoss: 0.6710011173324196
iteration: 64 HingeLoss: 0.35455204075511326
iteration: 65 HingeLoss: 0.1873426829799736
iteration: 66 HingeLoss: 0.09899049175231325
iteration: 67 HingeLoss: 0.052305845638029515
iteration: 68 HingeLoss: 0.027638023000784225
iteration: 69 HingeLoss: 0.014603727481589624
iteration: 70 HingeLoss: 0.12878180130498373

```

# Output\_hinge\_train.txt

```

iteration: 71 HingeLoss: 3685.8727620251716
iteration: 72 HingeLoss: 1341.591217224649
iteration: 73 HingeLoss: 278.5882049179683
iteration: 74 HingeLoss: 147.20395247126825
iteration: 75 HingeLoss: 77.78148263507401
iteration: 76 HingeLoss: 41.09916166884971
iteration: 77 HingeLoss: 21.716493857633935
iteration: 78 HingeLoss: 11.474835162540476
iteration: 79 HingeLoss: 6.063218255703328
iteration: 80 HingeLoss: 3.20375980095169
iteration: 81 HingeLoss: 1.6928430462715351
iteration: 82 HingeLoss: 0.8944857783840784
iteration: 83 HingeLoss: 0.4726396871190102
iteration: 84 HingeLoss: 0.24973932424450057
iteration: 85 HingeLoss: 0.1319604167273307
iteration: 86 HingeLoss: 0.214713351711475
iteration: 87 HingeLoss: 1467.675148170972
iteration: 88 HingeLoss: 385.0018809541034
iteration: 89 HingeLoss: 203.43215392771052
iteration: 90 HingeLoss: 107.4920495170288
iteration: 91 HingeLoss: 56.79800604911887
iteration: 92 HingeLoss: 30.011647425558458
iteration: 93 HingeLoss: 15.857933118587049
iteration: 94 HingeLoss: 8.379214883732782
iteration: 95 HingeLoss: 4.427515335240918
iteration: 96 HingeLoss: 2.3394664435507084
iteration: 97 HingeLoss: 1.2361568116854391
iteration: 98 HingeLoss: 0.6531761407772412
iteration: 99 HingeLoss: 0.34513345462939216
[-4.38321484e-03 1.25993814e-05 5.50023175e-04 ... 1.44818508e-03
 1.82640698e-03 -2.66163045e-04]

```

## CROSS VALIDATION 16

```

iteration: 0 HingeLoss: 2418.0579939972877
iteration: 1 HingeLoss: 314.50815075506654
iteration: 2 HingeLoss: 166.18378688791796
iteration: 3 HingeLoss: 87.81028713598153
iteration: 4 HingeLoss: 46.39830798959908
iteration: 5 HingeLoss: 24.516523684336676
iteration: 6 HingeLoss: 12.954350268535183
iteration: 7 HingeLoss: 6.844983124059827
iteration: 8 HingeLoss: 3.616838590698524
iteration: 9 HingeLoss: 1.9111108316958565
iteration: 10 HingeLoss: 1.0098168661488012
iteration: 11 HingeLoss: 0.533579783153503
iteration: 12 HingeLoss: 0.2819396214641816
iteration: 13 HingeLoss: 0.1489748162525452
iteration: 14 HingeLoss: 0.07871719399431461
iteration: 15 HingeLoss: 10475.861740276874
iteration: 16 HingeLoss: 1007.9878261857641
iteration: 17 HingeLoss: 1577.304321057856
iteration: 18 HingeLoss: 265.8915033969551
iteration: 19 HingeLoss: 140.4951090448517

```

Output\_hinge\_train.txt

```

iteration: 20 HingeLoss: 74.23657925637497
iteration: 21 HingeLoss: 39.22606087254391
iteration: 22 HingeLoss: 20.726761213804007
iteration: 23 HingeLoss: 10.951867734308893
iteration: 24 HingeLoss: 5.786886124297797
iteration: 25 HingeLoss: 3.0577479410824537
iteration: 26 HingeLoss: 1.615691456573898
iteration: 27 HingeLoss: 0.8537194474969619
iteration: 28 HingeLoss: 0.45109905859131577
iteration: 29 HingeLoss: 0.23835741502502858
iteration: 30 HingeLoss: 0.12594629985447606
iteration: 31 HingeLoss: 0.06654909579954948
iteration: 32 HingeLoss: 0.03516405132072023
iteration: 33 HingeLoss: 0.018580425330055595
iteration: 34 HingeLoss: 0.009817759685794373
iteration: 35 HingeLoss: 0.005187631797216823
iteration: 36 HingeLoss: 0.0027411063750556216
iteration: 37 HingeLoss: 0.0014483803887935293
iteration: 38 HingeLoss: 4532.8294079350135
iteration: 39 HingeLoss: 2123.2604105575765
iteration: 40 HingeLoss: 755.6397791571974
iteration: 41 HingeLoss: 1472.044975541
iteration: 42 HingeLoss: 140.44184317842138
iteration: 43 HingeLoss: 74.20843396546917
iteration: 44 HingeLoss: 39.21118910844315
iteration: 45 HingeLoss: 20.71890308335482
iteration: 46 HingeLoss: 10.947715556145075
iteration: 47 HingeLoss: 5.784692143984604
iteration: 48 HingeLoss: 3.0565886580688706
iteration: 49 HingeLoss: 1.6150788999809773
iteration: 50 HingeLoss: 0.8533957771117896
iteration: 51 HingeLoss: 0.4509280335473475
iteration: 52 HingeLoss: 0.23826704665336282
iteration: 53 HingeLoss: 0.12589854987349067
iteration: 54 HingeLoss: 0.06652386506182477
iteration: 55 HingeLoss: 0.03515071958502117
iteration: 56 HingeLoss: 0.01857338093925382
iteration: 57 HingeLoss: 0.009814037481657706
iteration: 58 HingeLoss: 6131.181067884343
iteration: 59 HingeLoss: 700.2900760522489
iteration: 60 HingeLoss: 282.2447443411904
iteration: 61 HingeLoss: 149.13604093001612
iteration: 62 HingeLoss: 78.80238392461554
iteration: 63 HingeLoss: 41.63859837955959
iteration: 64 HingeLoss: 22.001528236415254
iteration: 65 HingeLoss: 11.625445225730902
iteration: 66 HingeLoss: 6.142799502117213
iteration: 67 HingeLoss: 3.2458099445252957
iteration: 68 HingeLoss: 1.7150620319527201
iteration: 69 HingeLoss: 0.9062261265195489
iteration: 70 HingeLoss: 0.4788432004710519
iteration: 71 HingeLoss: 0.25301721493947

```

# Output\_hinge\_train.txt

```

iteration: 72 HingeLoss: 0.13369242999117434
iteration: 73 HingeLoss: 0.07064209382441035
iteration: 74 HingeLoss: 0.03732676128503485
iteration: 75 HingeLoss: 0.0197231853219578
iteration: 76 HingeLoss: 0.010421585635940298
iteration: 77 HingeLoss: 0.005506688975148571
iteration: 78 HingeLoss: 0.00530966250490869
iteration: 79 HingeLoss: 1351.1840282825133
iteration: 80 HingeLoss: 1469.676703945546
iteration: 81 HingeLoss: 219.95644381681583
iteration: 82 HingeLoss: 116.2233624029191
iteration: 83 HingeLoss: 61.41156737144698
iteration: 84 HingeLoss: 32.449419196316825
iteration: 85 HingeLoss: 17.14603374001924
iteration: 86 HingeLoss: 9.05983775041642
iteration: 87 HingeLoss: 4.787151437378327
iteration: 88 HingeLoss: 2.529495507062482
iteration: 89 HingeLoss: 1.3365667670946544
iteration: 90 HingeLoss: 0.7062320205408972
iteration: 91 HingeLoss: 0.3731677901295265
iteration: 92 HingeLoss: 0.19717910763023858
iteration: 93 HingeLoss: 0.10418798597907417
iteration: 94 HingeLoss: 0.05505216324810599
iteration: 95 HingeLoss: 0.029089156967722025
iteration: 96 HingeLoss: 0.015370495965422093
iteration: 97 HingeLoss: 0.008121656687583188
iteration: 98 HingeLoss: 0.004291423484274886
iteration: 99 HingeLoss: 0.03025426071471195
[-4.75000125e-04 -6.13256866e-05 -3.94736338e-04 ... 2.21306821e-04
-1.53685998e-04 5.99204892e-05]

```

## CROSS VALIDATION 17

```

iteration: 0 HingeLoss: 2359.9569950442537
iteration: 1 HingeLoss: 422.6032359216703
iteration: 2 HingeLoss: 297.45572997875337
iteration: 3 HingeLoss: 157.17341353698734
iteration: 4 HingeLoss: 83.04927232241702
iteration: 5 HingeLoss: 43.882622881762906
iteration: 6 HingeLoss: 23.187254230320715
iteration: 7 HingeLoss: 12.251974094396394
iteration: 8 HingeLoss: 6.4738527347265045
iteration: 9 HingeLoss: 3.4207360306200996
iteration: 10 HingeLoss: 1.807491685502003
iteration: 11 HingeLoss: 0.9550652736471558
iteration: 12 HingeLoss: 0.5046494455510492
iteration: 13 HingeLoss: 0.26665304447983523
iteration: 14 HingeLoss: 0.14089750173553364
iteration: 15 HingeLoss: 0.0744492005858795
iteration: 16 HingeLoss: 0.03933840841465172
iteration: 17 HingeLoss: 0.020786124826321535
iteration: 18 HingeLoss: 0.24141520218747262
iteration: 19 HingeLoss: 4301.7480656587395
iteration: 20 HingeLoss: 1729.7711864743999

```

Output\_hinge\_train.txt

iteration: 21 HingeLoss: 380.9814173639419  
iteration: 22 HingeLoss: 201.30777062364035  
iteration: 23 HingeLoss: 106.36954104968298  
iteration: 24 HingeLoss: 56.204880855163026  
iteration: 25 HingeLoss: 29.698244448263377  
iteration: 26 HingeLoss: 15.692333297203078  
iteration: 27 HingeLoss: 8.291713159661459  
iteration: 28 HingeLoss: 4.381280069698567  
iteration: 29 HingeLoss: 2.315036070292814  
iteration: 30 HingeLoss: 1.2232479826667457  
iteration: 31 HingeLoss: 0.6463552107458107  
iteration: 32 HingeLoss: 0.34152932551541104  
iteration: 33 HingeLoss: 0.18046157630944373  
iteration: 34 HingeLoss: 0.09535456574612551  
iteration: 35 HingeLoss: 0.050384649156787566  
iteration: 36 HingeLoss: 0.026622876951812095  
iteration: 37 HingeLoss: 0.014067331797543036  
iteration: 38 HingeLoss: 0.08845238223408136  
iteration: 39 HingeLoss: 5113.973164378339  
iteration: 40 HingeLoss: 1885.564843435597  
iteration: 41 HingeLoss: 1884.294519228653  
iteration: 42 HingeLoss: 314.34558668775117  
iteration: 43 HingeLoss: 310.44484138868347  
iteration: 44 HingeLoss: 131.8549821665825  
iteration: 45 HingeLoss: 69.67119994783978  
iteration: 46 HingeLoss: 36.813748122458826  
iteration: 47 HingeLoss: 19.452112951096975  
iteration: 48 HingeLoss: 10.278352994744239  
iteration: 49 HingeLoss: 5.431005904096916  
iteration: 50 HingeLoss: 2.8697034578806617  
iteration: 51 HingeLoss: 1.5163301387612083  
iteration: 52 HingeLoss: 0.8012176601040302  
iteration: 53 HingeLoss: 0.42335750141260675  
iteration: 54 HingeLoss: 0.22369898084754397  
iteration: 55 HingeLoss: 0.11820089136311138  
iteration: 56 HingeLoss: 0.10780744528264968  
iteration: 57 HingeLoss: 5949.8221316767895  
iteration: 58 HingeLoss: 318.73102480919516  
iteration: 59 HingeLoss: 168.41512238806652  
iteration: 60 HingeLoss: 88.98930835480168  
iteration: 61 HingeLoss: 47.02129410456734  
iteration: 62 HingeLoss: 24.845704952025482  
iteration: 63 HingeLoss: 13.128287222174562  
iteration: 64 HingeLoss: 6.936890127316004  
iteration: 65 HingeLoss: 3.7437807004734993  
iteration: 66 HingeLoss: 7923.227695444394  
iteration: 67 HingeLoss: 470.6429123671619  
iteration: 68 HingeLoss: 651.0041370466829  
iteration: 69 HingeLoss: 301.18704642961205  
iteration: 70 HingeLoss: 133.3546067979931  
iteration: 71 HingeLoss: 70.463590541088  
iteration: 72 HingeLoss: 37.23244146685772

# Output\_hinge\_train.txt

```

iteration: 73 HingeLoss: 19.67334742578365
iteration: 74 HingeLoss: 10.39525165923139
iteration: 75 HingeLoss: 5.492774296108304
iteration: 76 HingeLoss: 2.902341420584602
iteration: 77 HingeLoss: 1.5335757974998647
iteration: 78 HingeLoss: 0.8103301389688414
iteration: 79 HingeLoss: 0.4281724680265241
iteration: 80 HingeLoss: 0.2262431736887106
iteration: 81 HingeLoss: 0.1195452240931319
iteration: 82 HingeLoss: 0.06316681458482483
iteration: 83 HingeLoss: 0.033376878876275225
iteration: 84 HingeLoss: 6664.213736450869
iteration: 85 HingeLoss: 4607.5589751173
iteration: 86 HingeLoss: 481.04294374983357
iteration: 87 HingeLoss: 521.4071816984052
iteration: 88 HingeLoss: 579.1318625162676
iteration: 89 HingeLoss: 230.4464800764057
iteration: 90 HingeLoss: 121.76622018267778
iteration: 91 HingeLoss: 64.34037253535136
iteration: 92 HingeLoss: 33.99697824057692
iteration: 93 HingeLoss: 17.9637525234287
iteration: 94 HingeLoss: 9.491914323662993
iteration: 95 HingeLoss: 5.015457511466658
iteration: 96 HingeLoss: 2.650130752509776
iteration: 97 HingeLoss: 1.4003095409224706
iteration: 98 HingeLoss: 0.7399132320326021
iteration: 99 HingeLoss: 0.3909646938321066
[-8.31340021e-03 -2.17812466e-03 -5.21519481e-04 ... 2.39712615e-03
 1.70565543e-03 -1.94059139e-05]

```

## CROSS VALIDATION 18

```

iteration: 0 HingeLoss: 1258.474452404074
iteration: 1 HingeLoss: 2608.1756749704414
iteration: 2 HingeLoss: 260.5519333908437
iteration: 3 HingeLoss: 137.67371964098913
iteration: 4 HingeLoss: 72.74577790736808
iteration: 5 HingeLoss: 38.43833243663279
iteration: 6 HingeLoss: 20.310531318951604
iteration: 7 HingeLoss: 10.731934928190933
iteration: 8 HingeLoss: 5.670675251880585
iteration: 9 HingeLoss: 2.9963429733273244
iteration: 10 HingeLoss: 1.5832455245661607
iteration: 11 HingeLoss: 0.8365752563616651
iteration: 12 HingeLoss: 0.4420401944596427
iteration: 13 HingeLoss: 0.2335707780406124
iteration: 14 HingeLoss: 0.12341707618056397
iteration: 15 HingeLoss: 0.06521267266708626
iteration: 16 HingeLoss: 0.08565804771546032
iteration: 17 HingeLoss: 2019.5778203708264
iteration: 18 HingeLoss: 507.93452852778756
iteration: 19 HingeLoss: 308.66295984788667
iteration: 20 HingeLoss: 163.09523112964618
iteration: 21 HingeLoss: 86.17831705605879

```

# Output\_hinge\_train.txt

```

iteration: 22 HingeLoss: 45.53598703760395
iteration: 23 HingeLoss: 24.060879654217572
iteration: 24 HingeLoss: 12.71359132408087
iteration: 25 HingeLoss: 6.717767873769814
iteration: 26 HingeLoss: 3.5496189908492566
iteration: 27 HingeLoss: 1.8755924909812418
iteration: 28 HingeLoss: 0.9910492369164297
iteration: 29 HingeLoss: 0.5236631063066352
iteration: 30 HingeLoss: 0.27669972256871667
iteration: 31 HingeLoss: 0.1462060923283238
iteration: 32 HingeLoss: 0.07725422069626288
iteration: 33 HingeLoss: 0.04082056034973241
iteration: 34 HingeLoss: 0.021569282975716475
iteration: 35 HingeLoss: 0.011397050018437146
iteration: 36 HingeLoss: 0.006022117159341666
iteration: 37 HingeLoss: 0.0031820422848166433
iteration: 38 HingeLoss: 1373.0633876188178
iteration: 39 HingeLoss: 1211.0861095781663
iteration: 40 HingeLoss: 249.58575829740533
iteration: 41 HingeLoss: 131.87927361366562
iteration: 42 HingeLoss: 69.68403536929249
iteration: 43 HingeLoss: 36.82053026447391
iteration: 44 HingeLoss: 19.455696584909226
iteration: 45 HingeLoss: 10.280246560415934
iteration: 46 HingeLoss: 5.432006450229949
iteration: 47 HingeLoss: 2.8702321390768186
iteration: 48 HingeLoss: 1.5166094900054397
iteration: 49 HingeLoss: 0.8013652672408454
iteration: 50 HingeLoss: 0.4234354959348751
iteration: 51 HingeLoss: 0.22374019257778352
iteration: 52 HingeLoss: 0.1182226673373715
iteration: 53 HingeLoss: 0.06246798535092803
iteration: 54 HingeLoss: 0.03300762266400174
iteration: 55 HingeLoss: 0.017440984334753096
iteration: 56 HingeLoss: 0.009215687468969136
iteration: 57 HingeLoss: 11061.235775081863
iteration: 58 HingeLoss: 6006.132500332555
iteration: 59 HingeLoss: 1809.9572782669754
iteration: 60 HingeLoss: 655.0746037171343
iteration: 61 HingeLoss: 462.80104230439144
iteration: 62 HingeLoss: 177.24659808889768
iteration: 63 HingeLoss: 93.65579496969302
iteration: 64 HingeLoss: 49.4870312095124
iteration: 65 HingeLoss: 26.14858224975549
iteration: 66 HingeLoss: 13.81671797561373
iteration: 67 HingeLoss: 7.300651859220119
iteration: 68 HingeLoss: 3.8576105891143557
iteration: 69 HingeLoss: 2.038332979602846
iteration: 70 HingeLoss: 1.0770401106479988
iteration: 71 HingeLoss: 0.5691000496742553
iteration: 72 HingeLoss: 0.30070826827831104
iteration: 73 HingeLoss: 0.15889203078210745

```

# Output\_hinge\_train.txt

```

iteration: 74 HingeLoss: 0.08395737699734918
iteration: 75 HingeLoss: 0.04436245869335805
iteration: 76 HingeLoss: 0.023440795933656132
iteration: 77 HingeLoss: 0.012385943660187108
iteration: 78 HingeLoss: 0.006544641265063093
iteration: 79 HingeLoss: 0.0034581401678779817
iteration: 80 HingeLoss: 0.0018272557557172495
iteration: 81 HingeLoss: 5254.694709480285
iteration: 82 HingeLoss: 4851.906159023791
iteration: 83 HingeLoss: 367.59459024786275
iteration: 84 HingeLoss: 194.23426992350616
iteration: 85 HingeLoss: 102.63195545744787
iteration: 86 HingeLoss: 54.22996819854613
iteration: 87 HingeLoss: 28.654715168460793
iteration: 88 HingeLoss: 15.140940123354719
iteration: 89 HingeLoss: 8.000361073954691
iteration: 90 HingeLoss: 4.22733177677133
iteration: 91 HingeLoss: 2.2375350569367347
iteration: 92 HingeLoss: 5145.916969430355
iteration: 93 HingeLoss: 2988.9139518244515
iteration: 94 HingeLoss: 1280.6779367920835
iteration: 95 HingeLoss: 408.0011129223549
iteration: 96 HingeLoss: 207.18810325790295
iteration: 97 HingeLoss: 109.4766654373221
iteration: 98 HingeLoss: 57.84666246187186
iteration: 99 HingeLoss: 30.565749738637493
[-0.02315695 -0.00657573 -0.01610858 ... 0.03850332 0.00665006
0.00484909]

```

## CROSS VALIDATION 19

```

iteration: 0 HingeLoss: 2211.6323672938374
iteration: 1 HingeLoss: 1047.3850731359134
iteration: 2 HingeLoss: 282.3579970282683
iteration: 3 HingeLoss: 225.78175262632317
iteration: 4 HingeLoss: 119.30141260744121
iteration: 5 HingeLoss: 63.03798639426261
iteration: 6 HingeLoss: 33.30880701068398
iteration: 7 HingeLoss: 17.60012792185204
iteration: 8 HingeLoss: 9.299777766468697
iteration: 9 HingeLoss: 4.913933971941538
iteration: 10 HingeLoss: 2.596486463113637
iteration: 11 HingeLoss: 1.3719642941129389
iteration: 12 HingeLoss: 0.7249358127073103
iteration: 13 HingeLoss: 0.38305073594163624
iteration: 14 HingeLoss: 0.20240118329575454
iteration: 15 HingeLoss: 0.10694729224006368
iteration: 16 HingeLoss: 0.05651016032237543
iteration: 17 HingeLoss: 0.029859551866842783
iteration: 18 HingeLoss: 0.015777566947295395
iteration: 19 HingeLoss: 0.008336749991643765
iteration: 20 HingeLoss: 0.004405077199503584
iteration: 21 HingeLoss: 0.1538233041204428
iteration: 22 HingeLoss: 6450.75491639192

```



Output\_hinge\_train.txt

iteration: 23 HingeLoss: 1096.6987711831289  
iteration: 24 HingeLoss: 460.14520250191106  
iteration: 25 HingeLoss: 1087.847865995892  
iteration: 26 HingeLoss: 197.19688253529938  
iteration: 27 HingeLoss: 104.19737810779164  
iteration: 28 HingeLoss: 55.05712597963919  
iteration: 29 HingeLoss: 29.091779238456564  
iteration: 30 HingeLoss: 15.371881553935024  
iteration: 31 HingeLoss: 8.122388822332626  
iteration: 32 HingeLoss: 4.291810338875893  
iteration: 33 HingeLoss: 2.26776092450006  
iteration: 34 HingeLoss: 1.198268144355222  
iteration: 35 HingeLoss: 0.6331560484459122  
iteration: 36 HingeLoss: 0.33455498551983626  
iteration: 37 HingeLoss: 0.1767763865020382  
iteration: 38 HingeLoss: 0.09340733863571486  
iteration: 39 HingeLoss: 0.0493557487153778  
iteration: 40 HingeLoss: 0.02607921354826079  
iteration: 41 HingeLoss: 0.013780064065442533  
iteration: 42 HingeLoss: 0.0072812842034634265  
iteration: 43 HingeLoss: 3751.8084976091504  
iteration: 44 HingeLoss: 446.2774331016019  
iteration: 45 HingeLoss: 235.80970368301016  
iteration: 46 HingeLoss: 124.60010797455989  
iteration: 47 HingeLoss: 65.8377779403934  
iteration: 48 HingeLoss: 34.78819621098213  
iteration: 49 HingeLoss: 18.381826262567216  
iteration: 50 HingeLoss: 9.7128214035006  
iteration: 51 HingeLoss: 5.132183182930595  
iteration: 52 HingeLoss: 2.7118077362837796  
iteration: 53 HingeLoss: 1.4328992041880528  
iteration: 54 HingeLoss: 0.785652121290414  
iteration: 55 HingeLoss: 4378.967108404343  
iteration: 56 HingeLoss: 405.11622819325925  
iteration: 57 HingeLoss: 214.06042663529044  
iteration: 58 HingeLoss: 113.10795041620348  
iteration: 59 HingeLoss: 59.76540665851965  
iteration: 60 HingeLoss: 31.579600018519344  
iteration: 61 HingeLoss: 16.686427702696886  
iteration: 62 HingeLoss: 8.816985310581682  
iteration: 63 HingeLoss: 4.658829999571978  
iteration: 64 HingeLoss: 2.4616914058893786  
iteration: 65 HingeLoss: 1.3007395801921027  
iteration: 66 HingeLoss: 0.6873011992610247  
iteration: 67 HingeLoss: 0.36316488380854645  
iteration: 68 HingeLoss: 0.19189364571672476  
iteration: 69 HingeLoss: 0.1013951868922116  
iteration: 70 HingeLoss: 0.2505105134690408  
iteration: 71 HingeLoss: 1689.115095819091  
iteration: 72 HingeLoss: 644.1228926636384  
iteration: 73 HingeLoss: 304.44182730994726  
iteration: 74 HingeLoss: 160.86481583380595

# Output\_hinge\_train.txt

```

iteration: 75 HingeLoss: 84.99978206640715
iteration: 76 HingeLoss: 44.913257842541704
iteration: 77 HingeLoss: 23.731834141111918
iteration: 78 HingeLoss: 12.539726102161843
iteration: 79 HingeLoss: 6.625898773025539
iteration: 80 HingeLoss: 3.5010760356888944
iteration: 81 HingeLoss: 1.8499427515518756
iteration: 82 HingeLoss: 0.9774961038073922
iteration: 83 HingeLoss: 0.5165017307465792
iteration: 84 HingeLoss: 0.27291570454870817
iteration: 85 HingeLoss: 0.14420664511938058
iteration: 86 HingeLoss: 0.07619772753999031
iteration: 87 HingeLoss: 0.040262317159185414
iteration: 88 HingeLoss: 6261.073819837102
iteration: 89 HingeLoss: 1013.4799767189804
iteration: 90 HingeLoss: 468.9269074873183
iteration: 91 HingeLoss: 1051.4032313801167
iteration: 92 HingeLoss: 197.7542533558776
iteration: 93 HingeLoss: 104.49188873793625
iteration: 94 HingeLoss: 55.212743224148404
iteration: 95 HingeLoss: 29.17400624254379
iteration: 96 HingeLoss: 15.415329696346777
iteration: 97 HingeLoss: 8.14534650028754
iteration: 98 HingeLoss: 4.303941006559836
iteration: 99 HingeLoss: 2.274170679822321
[-0.0148703  0.00080781 -0.0030206  ...  0.00304015  0.00479005
 0.00011881]

```

Accuracy (Hinge Loss): 0.9

eta = 0.01 lambda = 0.1

CROSS VALIDATION 0

```

iteration: 0 HingeLoss: 1144.6482134951439
iteration: 1 HingeLoss: 218.69274256690255
iteration: 2 HingeLoss: 176.87715633539938
iteration: 3 HingeLoss: 143.0570034747561
iteration: 4 HingeLoss: 115.70350104662187
iteration: 5 HingeLoss: 93.58018013293527
iteration: 6 HingeLoss: 75.68699334503239
iteration: 7 HingeLoss: 61.215109369027985
iteration: 8 HingeLoss: 49.51035111117952
iteration: 9 HingeLoss: 40.04362472629192
iteration: 10 HingeLoss: 32.387002823295006
iteration: 11 HingeLoss: 26.194380729660026
iteration: 12 HingeLoss: 21.185831413731837
iteration: 13 HingeLoss: 17.134951855641425
iteration: 14 HingeLoss: 13.858628880849365
iteration: 15 HingeLoss: 11.2087618380952
iteration: 16 HingeLoss: 9.065567959378042
iteration: 17 HingeLoss: 7.332167782063266
iteration: 18 HingeLoss: 5.930205876258727
iteration: 19 HingeLoss: 4.796308919831822
iteration: 20 HingeLoss: 3.879221014325312
iteration: 21 HingeLoss: 3.137486748562216

```

Output\_hinge\_train.txt

iteration: 22 HingeLoss: 2.537577276739819  
iteration: 23 HingeLoss: 2.0523747035352904  
iteration: 24 HingeLoss: 1.659946265409223  
iteration: 25 HingeLoss: 1.3425528970415161  
iteration: 26 HingeLoss: 1.0858473668183561  
iteration: 27 HingeLoss: 0.8782257344381534  
iteration: 28 HingeLoss: 0.7103028143719367  
iteration: 29 HingeLoss: 0.574487934389064  
iteration: 30 HingeLoss: 0.4646418120283504  
iteration: 31 HingeLoss: 0.375799038694482  
iteration: 32 HingeLoss: 0.303943626741624  
iteration: 33 HingeLoss: 0.2458274735288943  
iteration: 34 HingeLoss: 0.1988235364216748  
iteration: 35 HingeLoss: 0.16080708176246472  
iteration: 36 HingeLoss: 0.13005963987139402  
iteration: 37 HingeLoss: 0.10519132452427281  
iteration: 38 HingeLoss: 0.08507800549126865  
iteration: 39 HingeLoss: 0.06881049412684327  
iteration: 40 HingeLoss: 0.05565344503129263  
iteration: 41 HingeLoss: 0.045012116002853084  
iteration: 42 HingeLoss: 0.036405483720101765  
iteration: 43 HingeLoss: 0.029444499894441468  
iteration: 44 HingeLoss: 0.023814504998735966  
iteration: 45 HingeLoss: 0.01926100461437562  
iteration: 46 HingeLoss: 0.015578165440545183  
iteration: 47 HingeLoss: 0.012599510947205246  
iteration: 48 HingeLoss: 0.010190396084482018  
iteration: 49 HingeLoss: 0.008241920880402159  
iteration: 50 HingeLoss: 0.006666007801429043  
iteration: 51 HingeLoss: 0.005391420356190634  
iteration: 52 HingeLoss: 0.0043605429700990395  
iteration: 53 HingeLoss: 0.0035267765705278686  
iteration: 54 HingeLoss: 0.06435057339617949  
iteration: 55 HingeLoss: 1154.146957072901  
iteration: 56 HingeLoss: 1714.5809231072715  
iteration: 57 HingeLoss: 219.37774724747052  
iteration: 58 HingeLoss: 177.43118331660213  
iteration: 59 HingeLoss: 143.50509661135504  
iteration: 60 HingeLoss: 116.06591563269694  
iteration: 61 HingeLoss: 93.8732985082734  
iteration: 62 HingeLoss: 75.9240654311515  
iteration: 63 HingeLoss: 61.40685160952064  
iteration: 64 HingeLoss: 49.66543089046088  
iteration: 65 HingeLoss: 40.16905216408639  
iteration: 66 HingeLoss: 32.48844765526851  
iteration: 67 HingeLoss: 26.27642859825312  
iteration: 68 HingeLoss: 21.252191154387997  
iteration: 69 HingeLoss: 17.188623148454575  
iteration: 70 HingeLoss: 13.902037846040475  
iteration: 71 HingeLoss: 11.243870704682832  
iteration: 72 HingeLoss: 9.093963764429875  
iteration: 73 HingeLoss: 7.3551341100285645

# Output\_hinge\_train.txt

```

iteration: 74 HingeLoss: 5.948780881237347
iteration: 75 HingeLoss: 4.811332253578389
iteration: 76 HingeLoss: 3.891371781289868
iteration: 77 HingeLoss: 3.1473142036609016
iteration: 78 HingeLoss: 2.545525653496481
iteration: 79 HingeLoss: 2.058803294908278
iteration: 80 HingeLoss: 1.6651456650232657
iteration: 81 HingeLoss: 1.346758134982149
iteration: 82 HingeLoss: 1.0892485337703193
iteration: 83 HingeLoss: 0.8809765744140216
iteration: 84 HingeLoss: 0.7125276744507589
iteration: 85 HingeLoss: 0.5762873856162389
iteration: 86 HingeLoss: 0.46609719556001733
iteration: 87 HingeLoss: 0.3769761426872214
iteration: 88 HingeLoss: 0.30489566019505726
iteration: 89 HingeLoss: 0.24659747150872172
iteration: 90 HingeLoss: 0.19944630538719832
iteration: 91 HingeLoss: 0.16131077293384433
iteration: 92 HingeLoss: 0.13046702175804997
iteration: 93 HingeLoss: 0.10552081213693199
iteration: 94 HingeLoss: 0.08534449276144895
iteration: 95 HingeLoss: 0.0690260271618943
iteration: 96 HingeLoss: 0.05582776663835054
iteration: 97 HingeLoss: 0.04515310609599615
iteration: 98 HingeLoss: 0.036519515518568864
iteration: 99 HingeLoss: 0.029536728013252966
[-0.00278411 -0.00068849 -0.00212537 ... 0.00122336 -0.00037017
 0.0002756 ]

```

## CROSS VALIDATION 1

```

iteration: 0 HingeLoss: 1114.695057237775
iteration: 1 HingeLoss: 185.85503088169582
iteration: 2 HingeLoss: 150.31824543937722
iteration: 3 HingeLoss: 121.57634261918815
iteration: 4 HingeLoss: 98.33009320627869
iteration: 5 HingeLoss: 79.52868972412597
iteration: 6 HingeLoss: 64.32224645580258
iteration: 7 HingeLoss: 52.023381794329936
iteration: 8 HingeLoss: 42.076146317095414
iteration: 9 HingeLoss: 34.0308920303712
iteration: 10 HingeLoss: 27.52394679054172
iteration: 11 HingeLoss: 22.26117511855033
iteration: 12 HingeLoss: 18.004682301923985
iteration: 13 HingeLoss: 14.562060765744747
iteration: 14 HingeLoss: 11.777692612914496
iteration: 15 HingeLoss: 9.525715179722809
iteration: 16 HingeLoss: 7.704331626527932
iteration: 17 HingeLoss: 6.231209383403564
iteration: 18 HingeLoss: 5.03975844525205
iteration: 19 HingeLoss: 4.076121282994992
iteration: 20 HingeLoss: 3.2967383048561545
iteration: 21 HingeLoss: 2.666378818522313
iteration: 22 HingeLoss: 2.1565484871492258

```

# Output\_hinge\_train.txt

```

iteration: 23 HingeLoss: 1.7442012909489717
iteration: 24 HingeLoss: 1.410697770755733
iteration: 25 HingeLoss: 1.1409624627283999
iteration: 26 HingeLoss: 0.9228024374475794
iteration: 27 HingeLoss: 0.7463561391168245
iteration: 28 HingeLoss: 0.6036476105743023
iteration: 29 HingeLoss: 0.4882259536087603
iteration: 30 HingeLoss: 0.39487372699182316
iteration: 31 HingeLoss: 0.31937110085172477
iteration: 32 HingeLoss: 0.258305106384945
iteration: 33 HingeLoss: 0.2089153583608515
iteration: 34 HingeLoss: 0.1689692765655168
iteration: 35 HingeLoss: 0.13666116578063983
iteration: 36 HingeLoss: 0.15752316109262804
iteration: 37 HingeLoss: 2037.4313763767086
iteration: 38 HingeLoss: 510.91094008252196
iteration: 39 HingeLoss: 180.80644909639884
iteration: 40 HingeLoss: 146.23498790083846
iteration: 41 HingeLoss: 118.2738325609
iteration: 42 HingeLoss: 95.65904623406206
iteration: 43 HingeLoss: 77.36836566700997
iteration: 44 HingeLoss: 62.574991510345356
iteration: 45 HingeLoss: 50.61021424922548
iteration: 46 HingeLoss: 40.93318631819608
iteration: 47 HingeLoss: 33.10647399967876
iteration: 48 HingeLoss: 26.77628397093979
iteration: 49 HingeLoss: 21.656470673964378
iteration: 50 HingeLoss: 17.515601588378967
iteration: 51 HingeLoss: 14.166495714911534
iteration: 52 HingeLoss: 11.457762374188617
iteration: 53 HingeLoss: 9.266957846546893
iteration: 54 HingeLoss: 7.4950505103103415
iteration: 55 HingeLoss: 6.061944284448841
iteration: 56 HingeLoss: 4.902858020397844
iteration: 57 HingeLoss: 3.965397179556066
iteration: 58 HingeLoss: 3.2071854265841537
iteration: 59 HingeLoss: 2.5939490786759807
iteration: 60 HingeLoss: 2.0979678215644353
iteration: 61 HingeLoss: 1.696821659493197
iteration: 62 HingeLoss: 1.3723774571424308
iteration: 63 HingeLoss: 1.1099692618464463
iteration: 64 HingeLoss: 0.8977353539523197
iteration: 65 HingeLoss: 0.7260820577997134
iteration: 66 HingeLoss: 0.5872500758020346
iteration: 67 HingeLoss: 0.4749637424928967
iteration: 68 HingeLoss: 0.3841473436589329
iteration: 69 HingeLoss: 0.3106956772440821
iteration: 70 HingeLoss: 0.2512884846181964
iteration: 71 HingeLoss: 0.2032403638886236
iteration: 72 HingeLoss: 0.1643793808392802
iteration: 73 HingeLoss: 0.13294889030956708
iteration: 74 HingeLoss: 0.10752813001423336

```

# Output\_hinge\_train.txt

```

iteration: 75 HingeLoss: 0.08696799738181671
iteration: 76 HingeLoss: 0.07033910631201831
iteration: 77 HingeLoss: 0.056889775845382996
iteration: 78 HingeLoss: 0.046012051693994
iteration: 79 HingeLoss: 0.037214224693813636
iteration: 80 HingeLoss: 0.03009860392168562
iteration: 81 HingeLoss: 0.024343539748259407
iteration: 82 HingeLoss: 0.01968888420928121
iteration: 83 HingeLoss: 0.015924231455871185
iteration: 84 HingeLoss: 0.012879406713185954
iteration: 85 HingeLoss: 0.010416773816892787
iteration: 86 HingeLoss: 0.0084250136026228
iteration: 87 HingeLoss: 0.006814091910997456
iteration: 88 HingeLoss: 0.005511189745387023
iteration: 89 HingeLoss: 0.004457411612050448
iteration: 90 HingeLoss: 0.06362450369205795
iteration: 91 HingeLoss: 3664.7989640253127
iteration: 92 HingeLoss: 490.7224278038699
iteration: 93 HingeLoss: 687.681989118243
iteration: 94 HingeLoss: 161.99842213319977
iteration: 95 HingeLoss: 131.02318760750015
iteration: 96 HingeLoss: 105.970635175168
iteration: 97 HingeLoss: 85.70830647983513
iteration: 98 HingeLoss: 69.32027714563239
iteration: 99 HingeLoss: 56.06575396140679
[-0.03555757 -0.03378036 -0.01001421 ... -0.01820774 0.02756007
0.01393728]

```

## CROSS VALIDATION 2

```

iteration: 0 HingeLoss: 1983.703603373287
iteration: 1 HingeLoss: 210.80585053790898
iteration: 2 HingeLoss: 170.4982933789117
iteration: 3 HingeLoss: 137.89782385519658
iteration: 4 HingeLoss: 111.53079275543526
iteration: 5 HingeLoss: 90.20532293328932
iteration: 6 HingeLoss: 72.95743251230924
iteration: 7 HingeLoss: 59.007459711934985
iteration: 8 HingeLoss: 47.72481955239002
iteration: 9 HingeLoss: 38.59949932478628
iteration: 10 HingeLoss: 31.219004327268596
iteration: 11 HingeLoss: 25.24971173810455
iteration: 12 HingeLoss: 20.421789759018726
iteration: 13 HingeLoss: 16.517000324094354
iteration: 14 HingeLoss: 13.358834016281728
iteration: 15 HingeLoss: 10.8045312570611
iteration: 16 HingeLoss: 8.73862910060341
iteration: 17 HingeLoss: 7.067741926148509
iteration: 18 HingeLoss: 5.716340098607475
iteration: 19 HingeLoss: 4.623335778865152
iteration: 20 HingeLoss: 3.7393215510990587
iteration: 21 HingeLoss: 3.024337043922437
iteration: 22 HingeLoss: 2.44606258922909
iteration: 23 HingeLoss: 1.9783582661362815

```

# Output\_hinge\_train.txt

```

iteration: 24 HingeLoss: 1.6000822899725051
iteration: 25 HingeLoss: 1.2941353335782946
iteration: 26 HingeLoss: 1.04668758107721
iteration: 27 HingeLoss: 0.8465535743870339
iteration: 28 HingeLoss: 0.684686593462695
iteration: 29 HingeLoss: 0.5537697145830273
iteration: 30 HingeLoss: 0.4478850611613096
iteration: 31 HingeLoss: 0.36224629612061165
iteration: 32 HingeLoss: 0.2929822636032083
iteration: 33 HingeLoss: 0.27744572962780645
iteration: 34 HingeLoss: 7284.000665295479
iteration: 35 HingeLoss: 1719.7400168056813
iteration: 36 HingeLoss: 202.76492584437327
iteration: 37 HingeLoss: 221.26462278684036
iteration: 38 HingeLoss: 154.88012921662101
iteration: 39 HingeLoss: 125.26596222238386
iteration: 40 HingeLoss: 101.31423166333309
iteration: 41 HingeLoss: 81.9422399782384
iteration: 42 HingeLoss: 66.2743089733294
iteration: 43 HingeLoss: 53.602196267258506
iteration: 44 HingeLoss: 43.35308038941534
iteration: 45 HingeLoss: 35.06366735198771
iteration: 46 HingeLoss: 28.359248227053843
iteration: 47 HingeLoss: 22.93676106181929
iteration: 48 HingeLoss: 18.551091474459867
iteration: 49 HingeLoss: 15.00399267212321
iteration: 50 HingeLoss: 12.135124039200585
iteration: 51 HingeLoss: 9.814803210374066
iteration: 52 HingeLoss: 7.93814399813214
iteration: 53 HingeLoss: 6.420315189659279
iteration: 54 HingeLoss: 5.192705895013862
iteration: 55 HingeLoss: 4.199824107629623
iteration: 56 HingeLoss: 3.396788281801948
iteration: 57 HingeLoss: 2.7472985381521497
iteration: 58 HingeLoss: 2.221995788836453
iteration: 59 HingeLoss: 1.79713460952364
iteration: 60 HingeLoss: 1.4535098675587124
iteration: 61 HingeLoss: 1.1755885863499935
iteration: 62 HingeLoss: 0.9508078033743047
iteration: 63 HingeLoss: 0.7690066826561748
iteration: 64 HingeLoss: 0.6988789654998792
iteration: 65 HingeLoss: 1916.2923575005302
iteration: 66 HingeLoss: 156.3416519324572
iteration: 67 HingeLoss: 126.44803154422068
iteration: 68 HingeLoss: 102.27028104011495
iteration: 69 HingeLoss: 82.71548600870362
iteration: 70 HingeLoss: 66.89970493942774
iteration: 71 HingeLoss: 54.10801213827793
iteration: 72 HingeLoss: 43.76218071823794
iteration: 73 HingeLoss: 35.39454482861856
iteration: 74 HingeLoss: 28.626859609466273
iteration: 75 HingeLoss: 23.15320327095942

```

# Output\_hinge\_train.txt

```

iteration: 76 HingeLoss: 18.72614841514434
iteration: 77 HingeLoss: 15.145577497946011
iteration: 78 HingeLoss: 12.249636853287761
iteration: 79 HingeLoss: 9.907420371245365
iteration: 80 HingeLoss: 8.013052108252722
iteration: 81 HingeLoss: 6.4809003437392505
iteration: 82 HingeLoss: 5.2417067427055875
iteration: 83 HingeLoss: 4.239455649563787
iteration: 84 HingeLoss: 3.428841994953205
iteration: 85 HingeLoss: 2.7732233565326734
iteration: 86 HingeLoss: 2.2429636001128412
iteration: 87 HingeLoss: 1.8140932282213342
iteration: 88 HingeLoss: 1.4672258794181663
iteration: 89 HingeLoss: 1.186682000541462
iteration: 90 HingeLoss: 0.9597800789661095
iteration: 91 HingeLoss: 0.7762633962256724
iteration: 92 HingeLoss: 0.6278363903623941
iteration: 93 HingeLoss: 0.5077896690477033
iteration: 94 HingeLoss: 0.41069672282414516
iteration: 95 HingeLoss: 0.33216862890262405
iteration: 96 HingeLoss: 0.26865565731405533
iteration: 97 HingeLoss: 0.21728681135630562
iteration: 98 HingeLoss: 0.17574004903309606
iteration: 99 HingeLoss: 0.14213731906402124
[-0.00387721 -0.00151101 -0.00180794 ... 0.00458601 0.00090692
0.00083043]

```

## CROSS VALIDATION 3

```

iteration: 0 HingeLoss: 1932.6325261997868
iteration: 1 HingeLoss: 239.6425102127551
iteration: 2 HingeLoss: 202.58250596196763
iteration: 3 HingeLoss: 163.84730996224127
iteration: 4 HingeLoss: 132.51855511602153
iteration: 5 HingeLoss: 107.18007792795032
iteration: 6 HingeLoss: 86.68649529557575
iteration: 7 HingeLoss: 70.11142939904735
iteration: 8 HingeLoss: 56.70563235503738
iteration: 9 HingeLoss: 45.86311773053589
iteration: 10 HingeLoss: 37.09376794875191
iteration: 11 HingeLoss: 30.00117935113127
iteration: 12 HingeLoss: 24.264743438905057
iteration: 13 HingeLoss: 19.625154306931762
iteration: 14 HingeLoss: 15.872687157835532
iteration: 15 HingeLoss: 12.837718046452714
iteration: 16 HingeLoss: 10.383056315632153
iteration: 17 HingeLoss: 8.397743124088782
iteration: 18 HingeLoss: 6.7920357392270265
iteration: 19 HingeLoss: 5.493350868355221
iteration: 20 HingeLoss: 4.442983653424262
iteration: 21 HingeLoss: 3.59345401698429
iteration: 22 HingeLoss: 2.9063604054064864
iteration: 23 HingeLoss: 2.3506439114541435
iteration: 24 HingeLoss: 1.9011843087931242

```



# Output\_hinge\_train.txt

```

iteration: 25 HingeLoss: 1.5376645345509627
iteration: 26 HingeLoss: 1.243652290774881
iteration: 27 HingeLoss: 1.00585725013244
iteration: 28 HingeLoss: 0.8135302890919818
iteration: 29 HingeLoss: 0.6579775919325935
iteration: 30 HingeLoss: 0.5321676614753121
iteration: 31 HingeLoss: 0.4304134721188424
iteration: 32 HingeLoss: 0.3481153974441414
iteration: 33 HingeLoss: 0.2815532918640427
iteration: 34 HingeLoss: 0.2277183277197582
iteration: 35 HingeLoss: 0.1841769863039761
iteration: 36 HingeLoss: 0.14896105475427576
iteration: 37 HingeLoss: 0.12047865631205253
iteration: 38 HingeLoss: 0.097442292219947
iteration: 39 HingeLoss: 0.0788106425131808
iteration: 40 HingeLoss: 0.06374149490778229
iteration: 41 HingeLoss: 0.051553674015527975
iteration: 42 HingeLoss: 0.04169624996000575
iteration: 43 HingeLoss: 0.03372363452124905
iteration: 44 HingeLoss: 0.02727543907218616
iteration: 45 HingeLoss: 0.02206018381891137
iteration: 46 HingeLoss: 0.01784212194847549
iteration: 47 HingeLoss: 0.01443058309203067
iteration: 48 HingeLoss: 0.011671354392563983
iteration: 49 HingeLoss: 0.009439709572931299
iteration: 50 HingeLoss: 0.0076347708949753975
iteration: 51 HingeLoss: 0.0061749491516043375
iteration: 52 HingeLoss: 0.004994255564367135
iteration: 53 HingeLoss: 0.06420348855482189
iteration: 54 HingeLoss: 1125.0371412849468
iteration: 55 HingeLoss: 1703.877762151946
iteration: 56 HingeLoss: 384.3000890979305
iteration: 57 HingeLoss: 782.2791235209487
iteration: 58 HingeLoss: 158.71751344979268
iteration: 59 HingeLoss: 128.36961167578102
iteration: 60 HingeLoss: 103.82444157306918
iteration: 61 HingeLoss: 83.9724801472885
iteration: 62 HingeLoss: 67.91635298249274
iteration: 63 HingeLoss: 54.930269945010025
iteration: 64 HingeLoss: 44.42721706522534
iteration: 65 HingeLoss: 35.932421561674
iteration: 66 HingeLoss: 29.0618905386372
iteration: 67 HingeLoss: 23.505053235281682
iteration: 68 HingeLoss: 19.010722198506155
iteration: 69 HingeLoss: 15.375738778004232
iteration: 70 HingeLoss: 12.435789682308869
iteration: 71 HingeLoss: 10.057979473731232
iteration: 72 HingeLoss: 8.1348232543618
iteration: 73 HingeLoss: 6.57938799264185
iteration: 74 HingeLoss: 5.3213628623718465
iteration: 75 HingeLoss: 4.303880960463025
iteration: 76 HingeLoss: 3.480948734546521

```

Output\_hinge\_train.txt

```
iteration: 77 HingeLoss: 2.8153669220529363
iteration: 78 HingeLoss: 2.2770490203218756
iteration: 79 HingeLoss: 1.8416612770203322
iteration: 80 HingeLoss: 1.4895227239318367
iteration: 81 HingeLoss: 1.2047155319999832
iteration: 82 HingeLoss: 0.9743654727273695
iteration: 83 HingeLoss: 0.7880599604017089
iteration: 84 HingeLoss: 0.6373773687300095
iteration: 85 HingeLoss: 0.5155063454335468
iteration: 86 HingeLoss: 0.41693791656230045
iteration: 87 HingeLoss: 0.3372164626239714
iteration: 88 HingeLoss: 0.2727383098237185
iteration: 89 HingeLoss: 0.2205888320714828
iteration: 90 HingeLoss: 0.1784107002280365
iteration: 91 HingeLoss: 0.1442973230192522
iteration: 92 HingeLoss: 0.11670666279493894
iteration: 93 HingeLoss: 0.09439153031906455
iteration: 94 HingeLoss: 0.07634320768497939
iteration: 95 HingeLoss: 0.06174585092466437
iteration: 96 HingeLoss: 0.04993961115889814
iteration: 97 HingeLoss: 0.040390807242170965
iteration: 98 HingeLoss: 0.03266780160709219
iteration: 99 HingeLoss: 0.026421488816547226
[-0.00273671 -0.00058715 -0.00263428 ... 0.00155795 0.00016134
0.00025476]
```

CROSS VALIDATION 4

```
iteration: 0 HingeLoss: 1932.6325261997868
iteration: 1 HingeLoss: 239.6425102127551
iteration: 2 HingeLoss: 202.58250596196763
iteration: 3 HingeLoss: 163.84730996224127
iteration: 4 HingeLoss: 132.51855511602153
iteration: 5 HingeLoss: 107.18007792795032
iteration: 6 HingeLoss: 86.68649529557575
iteration: 7 HingeLoss: 70.11142939904735
iteration: 8 HingeLoss: 56.70563235503738
iteration: 9 HingeLoss: 45.86311773053589
iteration: 10 HingeLoss: 37.09376794875191
iteration: 11 HingeLoss: 30.00117935113127
iteration: 12 HingeLoss: 24.264743438905057
iteration: 13 HingeLoss: 19.625154306931762
iteration: 14 HingeLoss: 15.872687157835532
iteration: 15 HingeLoss: 12.837718046452714
iteration: 16 HingeLoss: 10.383056315632153
iteration: 17 HingeLoss: 8.397743124088782
iteration: 18 HingeLoss: 6.7920357392270265
iteration: 19 HingeLoss: 5.493350868355221
iteration: 20 HingeLoss: 4.442983653424262
iteration: 21 HingeLoss: 3.59345401698429
iteration: 22 HingeLoss: 2.9063604054064864
iteration: 23 HingeLoss: 2.3506439114541435
iteration: 24 HingeLoss: 1.9011843087931242
iteration: 25 HingeLoss: 1.5376645345509627
```

# Output\_hinge\_train.txt

```

iteration: 26 HingeLoss: 1.243652290774881
iteration: 27 HingeLoss: 1.00585725013244
iteration: 28 HingeLoss: 0.8135302890919818
iteration: 29 HingeLoss: 0.6579775919325935
iteration: 30 HingeLoss: 0.5321676614753121
iteration: 31 HingeLoss: 0.4304134721188424
iteration: 32 HingeLoss: 0.3481153974441414
iteration: 33 HingeLoss: 0.2815532918640427
iteration: 34 HingeLoss: 0.2277183277197582
iteration: 35 HingeLoss: 0.1841769863039761
iteration: 36 HingeLoss: 0.14896105475427576
iteration: 37 HingeLoss: 0.12047865631205253
iteration: 38 HingeLoss: 0.097442292219947
iteration: 39 HingeLoss: 0.0788106425131808
iteration: 40 HingeLoss: 0.06374149490778229
iteration: 41 HingeLoss: 0.051553674015527975
iteration: 42 HingeLoss: 0.04169624996000575
iteration: 43 HingeLoss: 0.03372363452124905
iteration: 44 HingeLoss: 0.02727543907218616
iteration: 45 HingeLoss: 0.02206018381891137
iteration: 46 HingeLoss: 0.01784212194847549
iteration: 47 HingeLoss: 0.01443058309203067
iteration: 48 HingeLoss: 0.011671354392563983
iteration: 49 HingeLoss: 0.009439709572931299
iteration: 50 HingeLoss: 0.0076347708949753975
iteration: 51 HingeLoss: 0.0061749491516043375
iteration: 52 HingeLoss: 0.004994255564367135
iteration: 53 HingeLoss: 0.06420348855482189
iteration: 54 HingeLoss: 1125.0371412849468
iteration: 55 HingeLoss: 1703.877762151946
iteration: 56 HingeLoss: 384.3000890979305
iteration: 57 HingeLoss: 782.2791235209487
iteration: 58 HingeLoss: 158.71751344979268
iteration: 59 HingeLoss: 128.36961167578102
iteration: 60 HingeLoss: 103.82444157306918
iteration: 61 HingeLoss: 83.9724801472885
iteration: 62 HingeLoss: 67.91635298249274
iteration: 63 HingeLoss: 54.930269945010025
iteration: 64 HingeLoss: 44.42721706522534
iteration: 65 HingeLoss: 35.932421561674
iteration: 66 HingeLoss: 29.0618905386372
iteration: 67 HingeLoss: 23.505053235281682
iteration: 68 HingeLoss: 19.010722198506155
iteration: 69 HingeLoss: 15.375738778004232
iteration: 70 HingeLoss: 12.435789682308869
iteration: 71 HingeLoss: 10.057979473731232
iteration: 72 HingeLoss: 8.1348232543618
iteration: 73 HingeLoss: 6.57938799264185
iteration: 74 HingeLoss: 5.3213628623718465
iteration: 75 HingeLoss: 4.303880960463025
iteration: 76 HingeLoss: 3.480948734546521
iteration: 77 HingeLoss: 2.8153669220529363

```

# Output\_hinge\_train.txt

```

iteration: 78 HingeLoss: 2.2770490203218756
iteration: 79 HingeLoss: 1.8416612770203322
iteration: 80 HingeLoss: 1.4895227239318367
iteration: 81 HingeLoss: 1.2047155319999832
iteration: 82 HingeLoss: 0.9743654727273695
iteration: 83 HingeLoss: 0.7880599604017089
iteration: 84 HingeLoss: 0.6373773687300095
iteration: 85 HingeLoss: 0.5155063454335468
iteration: 86 HingeLoss: 0.41693791656230045
iteration: 87 HingeLoss: 0.3372164626239714
iteration: 88 HingeLoss: 0.2727383098237185
iteration: 89 HingeLoss: 0.2205888320714828
iteration: 90 HingeLoss: 0.1784107002280365
iteration: 91 HingeLoss: 0.1442973230192522
iteration: 92 HingeLoss: 0.11670666279493894
iteration: 93 HingeLoss: 0.09439153031906455
iteration: 94 HingeLoss: 0.07634320768497939
iteration: 95 HingeLoss: 0.06174585092466437
iteration: 96 HingeLoss: 0.04993961115889814
iteration: 97 HingeLoss: 0.040390807242170965
iteration: 98 HingeLoss: 0.03266780160709219
iteration: 99 HingeLoss: 0.026421488816547226
[-0.00273671 -0.00058715 -0.00263428 ... 0.00155795 0.00016134
0.00025476]

```

## CROSS VALIDATION 5

```

iteration: 0 HingeLoss: 3273.9302221250705
iteration: 1 HingeLoss: 242.4110694780668
iteration: 2 HingeLoss: 196.06037278711457
iteration: 3 HingeLoss: 158.57225439492703
iteration: 4 HingeLoss: 128.25212717101405
iteration: 5 HingeLoss: 103.72942092961871
iteration: 6 HingeLoss: 83.89562811731531
iteration: 7 HingeLoss: 67.8541955996701
iteration: 8 HingeLoss: 54.87999748973843
iteration: 9 HingeLoss: 44.38655705599931
iteration: 10 HingeLoss: 35.89953603139045
iteration: 11 HingeLoss: 29.035292952394244
iteration: 12 HingeLoss: 23.483541294076772
iteration: 13 HingeLoss: 18.993323491338636
iteration: 14 HingeLoss: 15.361666825677052
iteration: 15 HingeLoss: 12.42440838596358
iteration: 16 HingeLoss: 10.048774361072544
iteration: 17 HingeLoss: 8.127378223805662
iteration: 18 HingeLoss: 6.57336650414551
iteration: 19 HingeLoss: 5.316492724709128
iteration: 20 HingeLoss: 4.2999420272792666
iteration: 21 HingeLoss: 3.4777629530141283
iteration: 22 HingeLoss: 2.8127902842937598
iteration: 23 HingeLoss: 2.274965053774105
iteration: 24 HingeLoss: 1.8399757794928815
iteration: 25 HingeLoss: 1.488159505353266
iteration: 26 HingeLoss: 1.2036129703748883

```

Output\_hinge\_train.txt

```

iteration: 27 HingeLoss: 0.9734737286180665
iteration: 28 HingeLoss: 0.78733872402056
iteration: 29 HingeLoss: 0.6367940378034969
iteration: 30 HingeLoss: 0.5150345514715114
iteration: 31 HingeLoss: 0.4165563329148432
iteration: 32 HingeLoss: 0.3369078404462344
iteration: 33 HingeLoss: 0.2724886983709586
iteration: 34 HingeLoss: 0.22038694807919879
iteration: 35 HingeLoss: 0.17824741787103793
iteration: 36 HingeLoss: 0.1441652613941307
iteration: 37 HingeLoss: 0.11659985227878583
iteration: 38 HingeLoss: 0.09430514272274045
iteration: 39 HingeLoss: 0.07627333800297206
iteration: 40 HingeLoss: 0.06168934081590419
iteration: 41 HingeLoss: 0.049893906179279794
iteration: 42 HingeLoss: 0.04035384137521823
iteration: 43 HingeLoss: 0.046579419218417586
iteration: 44 HingeLoss: 405.1975601957264
iteration: 45 HingeLoss: 187.21844131632267
iteration: 46 HingeLoss: 2076.0218837025054
iteration: 47 HingeLoss: 215.56716877944334
iteration: 48 HingeLoss: 174.3492141780454
iteration: 49 HingeLoss: 141.01242158820187
iteration: 50 HingeLoss: 114.04985755693019
iteration: 51 HingeLoss: 92.24272487668816
iteration: 52 HingeLoss: 74.60526891433503
iteration: 53 HingeLoss: 60.34021823640733
iteration: 54 HingeLoss: 48.80274529936955
iteration: 55 HingeLoss: 39.471318108658934
iteration: 56 HingeLoss: 31.924125244959797
iteration: 57 HingeLoss: 25.820008590802686
iteration: 58 HingeLoss: 20.88304185357059
iteration: 59 HingeLoss: 16.89005778306843
iteration: 60 HingeLoss: 13.660560272574191
iteration: 61 HingeLoss: 11.04856533692276
iteration: 62 HingeLoss: 8.936002152805413
iteration: 63 HingeLoss: 7.227375866447414
iteration: 64 HingeLoss: 5.8454509098912455
iteration: 65 HingeLoss: 4.727759697482585
iteration: 66 HingeLoss: 3.8237788840752573
iteration: 67 HingeLoss: 3.092645542472323
iteration: 68 HingeLoss: 2.501310023758604
iteration: 69 HingeLoss: 2.0230420036929453
iteration: 70 HingeLoss: 1.6362221835084871
iteration: 71 HingeLoss: 1.3233650259945995
iteration: 72 HingeLoss: 1.0703283512942317
iteration: 73 HingeLoss: 0.8656740635284884
iteration: 74 HingeLoss: 0.7001511109742797
iteration: 75 HingeLoss: 0.5662773078823857
iteration: 76 HingeLoss: 0.45800111489689893
iteration: 77 HingeLoss: 0.3704280894306467
iteration: 78 HingeLoss: 0.29959964064744327

```

# Output\_hinge\_train.txt

```

iteration: 79 HingeLoss: 0.2423140880434835
iteration: 80 HingeLoss: 0.19598193488302557
iteration: 81 HingeLoss: 0.15850881436824246
iteration: 82 HingeLoss: 0.12820081732238306
iteration: 83 HingeLoss: 0.1036879218839196
iteration: 84 HingeLoss: 0.0838620639802171
iteration: 85 HingeLoss: 0.06782704916099501
iteration: 86 HingeLoss: 0.054858041640535884
iteration: 87 HingeLoss: 0.04436879931915678
iteration: 88 HingeLoss: 0.03588517369838027
iteration: 89 HingeLoss: 0.02902367679818917
iteration: 90 HingeLoss: 0.02347414623002833
iteration: 91 HingeLoss: 0.01898572482943075
iteration: 92 HingeLoss: 0.015355521081220938
iteration: 93 HingeLoss: 0.0124194377509521
iteration: 94 HingeLoss: 0.010044754146337959
iteration: 95 HingeLoss: 0.008124126702325056
iteration: 96 HingeLoss: 0.006570736696377301
iteration: 97 HingeLoss: 0.00531436575463097
iteration: 98 HingeLoss: 0.004298221748798058
iteration: 99 HingeLoss: 0.0034763716038440995
[-1.00645501e-03 -3.44312264e-04 -4.64803977e-05 ... 4.09587346e-04
 3.51734472e-04 5.60453219e-05]

```

## CROSS VALIDATION 6

```

iteration: 0 HingeLoss: 1929.8835721872936
iteration: 1 HingeLoss: 229.3812798635257
iteration: 2 HingeLoss: 187.54610142423132
iteration: 3 HingeLoss: 151.6859714334611
iteration: 4 HingeLoss: 122.68254981033702
iteration: 5 HingeLoss: 99.2247858238369
iteration: 6 HingeLoss: 80.25231083807103
iteration: 7 HingeLoss: 64.90750613747541
iteration: 8 HingeLoss: 52.49673572001125
iteration: 9 HingeLoss: 42.45899165220795
iteration: 10 HingeLoss: 34.34053465223491
iteration: 11 HingeLoss: 27.774383571354107
iteration: 12 HingeLoss: 22.463726630374452
iteration: 13 HingeLoss: 18.168504544044918
iteration: 14 HingeLoss: 14.69455904616654
iteration: 15 HingeLoss: 11.884856292811953
iteration: 16 HingeLoss: 9.612388412406332
iteration: 17 HingeLoss: 7.774432329219372
iteration: 18 HingeLoss: 6.287906340072721
iteration: 19 HingeLoss: 5.085614546148697
iteration: 20 HingeLoss: 4.113209375777708
iteration: 21 HingeLoss: 3.3267348941728025
iteration: 22 HingeLoss: 2.69063984957352
iteration: 23 HingeLoss: 2.1761706389030238
iteration: 24 HingeLoss: 1.760071549662892
iteration: 25 HingeLoss: 1.42353352469378
iteration: 26 HingeLoss: 1.1513439304869297
iteration: 27 HingeLoss: 0.9311988957578246

```

# Output\_hinge\_train.txt

```

iteration: 28 HingeLoss: 0.7531471357076267
iteration: 29 HingeLoss: 0.6091401209866993
iteration: 30 HingeLoss: 0.4926682575073005
iteration: 31 HingeLoss: 0.3984666312278251
iteration: 32 HingeLoss: 0.3222770165981288
iteration: 33 HingeLoss: 0.2606553906593165
iteration: 34 HingeLoss: 0.2108162517976946
iteration: 35 HingeLoss: 0.1705067058448747
iteration: 36 HingeLoss: 0.1379046277986646
iteration: 37 HingeLoss: 0.11153629573719115
iteration: 38 HingeLoss: 0.09020977370633705
iteration: 39 HingeLoss: 0.07296103226633367
iteration: 40 HingeLoss: 0.05901037116774224
iteration: 41 HingeLoss: 0.04772717431742675
iteration: 42 HingeLoss: 0.03860140384223231
iteration: 43 HingeLoss: 0.031220544687621123
iteration: 44 HingeLoss: 10833.70473908036
iteration: 45 HingeLoss: 737.8593986379584
iteration: 46 HingeLoss: 1426.1015991827887
iteration: 47 HingeLoss: 305.5079195138719
iteration: 48 HingeLoss: 292.2524609568139
iteration: 49 HingeLoss: 150.25025338475868
iteration: 50 HingeLoss: 121.52135112229078
iteration: 51 HingeLoss: 98.28561646928378
iteration: 52 HingeLoss: 79.49271725119253
iteration: 53 HingeLoss: 64.2931521719954
iteration: 54 HingeLoss: 51.99985054164628
iteration: 55 HingeLoss: 42.05711440496678
iteration: 56 HingeLoss: 34.01549915332634
iteration: 57 HingeLoss: 27.511497139549377
iteration: 58 HingeLoss: 22.251105928146252
iteration: 59 HingeLoss: 17.996538411347807
iteration: 60 HingeLoss: 14.555474044165813
iteration: 61 HingeLoss: 11.772365318698972
iteration: 62 HingeLoss: 9.521406501525517
iteration: 63 HingeLoss: 7.700846797821879
iteration: 64 HingeLoss: 6.228390878387768
iteration: 65 HingeLoss: 5.037478858163522
iteration: 66 HingeLoss: 4.074277568946208
iteration: 67 HingeLoss: 3.2952471218648185
iteration: 68 HingeLoss: 2.665172760177679
iteration: 69 HingeLoss: 2.155573035619058
iteration: 70 HingeLoss: 1.7434123525929301
iteration: 71 HingeLoss: 1.4100596829467702
iteration: 72 HingeLoss: 1.140446381783889
iteration: 73 HingeLoss: 0.9223850347993132
iteration: 74 HingeLoss: 0.7460185467824582
iteration: 75 HingeLoss: 0.6033745682620495
iteration: 76 HingeLoss: 0.48800511890165676
iteration: 77 HingeLoss: 0.39469511742959357
iteration: 78 HingeLoss: 0.31922664269051354
iteration: 79 HingeLoss: 0.2581882696373483

```

# Output\_hinge\_train.txt

```

iteration: 80 HingeLoss: 0.20882086161885713
iteration: 81 HingeLoss: 0.1688928482633668
iteration: 82 HingeLoss: 0.13659935110590868
iteration: 83 HingeLoss: 0.11048059710295366
iteration: 84 HingeLoss: 0.08935593205535508
iteration: 85 HingeLoss: 0.07227045112763762
iteration: 86 HingeLoss: 0.05845183398631725
iteration: 87 HingeLoss: 0.04727543336252141
iteration: 88 HingeLoss: 0.03823603892629573
iteration: 89 HingeLoss: 0.030925040106183965
iteration: 90 HingeLoss: 0.02501195553787814
iteration: 91 HingeLoss: 0.02022949421183433
iteration: 92 HingeLoss: 0.016361473034241427
iteration: 93 HingeLoss: 0.013233044635075708
iteration: 94 HingeLoss: 0.01070279368779492
iteration: 95 HingeLoss: 0.00865634446814117
iteration: 96 HingeLoss: 0.007001190692535572
iteration: 97 HingeLoss: 0.005662513927633975
iteration: 98 HingeLoss: 0.011808170127860583
iteration: 99 HingeLoss: 12529.474596948306
[-0.07058792 -0.0771763 -0.03350929 ... 0.01504985 0.03433842
-0.00981969]

```

## CROSS VALIDATION 7

```

iteration: 0 HingeLoss: 1929.8835721872936
iteration: 1 HingeLoss: 239.12814177349748
iteration: 2 HingeLoss: 202.6731407929925
iteration: 3 HingeLoss: 163.92061477788573
iteration: 4 HingeLoss: 132.57784353677425
iteration: 5 HingeLoss: 107.22802998682192
iteration: 6 HingeLoss: 86.7252785844681
iteration: 7 HingeLoss: 70.1427970510878
iteration: 8 HingeLoss: 56.73100229200334
iteration: 9 HingeLoss: 45.88363675761599
iteration: 10 HingeLoss: 37.11036359393929
iteration: 11 HingeLoss: 30.014601792561365
iteration: 12 HingeLoss: 24.2755994153923
iteration: 13 HingeLoss: 19.633934544573716
iteration: 14 HingeLoss: 15.879788552458093
iteration: 15 HingeLoss: 12.843461604616142
iteration: 16 HingeLoss: 10.387701665190953
iteration: 17 HingeLoss: 8.401500250230695
iteration: 18 HingeLoss: 6.795074476499117
iteration: 19 HingeLoss: 5.495808577747992
iteration: 20 HingeLoss: 4.444971431543417
iteration: 21 HingeLoss: 3.5950617179853164
iteration: 22 HingeLoss: 2.9076607027001287
iteration: 23 HingeLoss: 2.3516955827853017
iteration: 24 HingeLoss: 1.9020348931896223
iteration: 25 HingeLoss: 1.5383524812450777
iteration: 26 HingeLoss: 1.2442086972360067
iteration: 27 HingeLoss: 1.0063072677757117
iteration: 28 HingeLoss: 0.8138942602055549

```



Output\_hinge\_train.txt

iteration: 29 HingeLoss: 0.6582719692164556  
iteration: 30 HingeLoss: 0.5324057517578158  
iteration: 31 HingeLoss: 0.4306060378694295  
iteration: 32 HingeLoss: 0.3482711432726111  
iteration: 33 HingeLoss: 0.2816792579977493  
iteration: 34 HingeLoss: 0.22782020824520713  
iteration: 35 HingeLoss: 0.18425938655839627  
iteration: 36 HingeLoss: 0.14902769950211736  
iteration: 37 HingeLoss: 0.12053255811667829  
iteration: 38 HingeLoss: 0.09748588762147542  
iteration: 39 HingeLoss: 0.07884590216817047  
iteration: 40 HingeLoss: 0.06377001266943605  
iteration: 41 HingeLoss: 0.05157673898113753  
iteration: 42 HingeLoss: 0.04171490474241924  
iteration: 43 HingeLoss: 0.033738722378425415  
iteration: 44 HingeLoss: 0.027287642025248166  
iteration: 45 HingeLoss: 0.022070053481759652  
iteration: 46 HingeLoss: 0.017850104462564003  
iteration: 47 HingeLoss: 0.014437039293438238  
iteration: 48 HingeLoss: 0.011676576122980332  
iteration: 49 HingeLoss: 0.009443932871868215  
iteration: 50 HingeLoss: 0.007638186669534482  
iteration: 51 HingeLoss: 0.006177711806110392  
iteration: 52 HingeLoss: 0.0049964899799551064  
iteration: 53 HingeLoss: 0.062302275333657495  
iteration: 54 HingeLoss: 1124.9368950847236  
iteration: 55 HingeLoss: 1703.8593129299184  
iteration: 56 HingeLoss: 384.22295869231607  
iteration: 57 HingeLoss: 783.3512873731498  
iteration: 58 HingeLoss: 158.75589280310277  
iteration: 59 HingeLoss: 128.4006526275557  
iteration: 60 HingeLoss: 103.84954727715163  
iteration: 61 HingeLoss: 83.99278546466559  
iteration: 62 HingeLoss: 67.93277578077127  
iteration: 63 HingeLoss: 54.943552589072546  
iteration: 64 HingeLoss: 44.437959974582185  
iteration: 65 HingeLoss: 35.9411103514139  
iteration: 66 HingeLoss: 29.068917970837983  
iteration: 67 HingeLoss: 23.510736973157137  
iteration: 68 HingeLoss: 19.01531916583558  
iteration: 69 HingeLoss: 15.379456772938367  
iteration: 70 HingeLoss: 12.438796770534584  
iteration: 71 HingeLoss: 10.060411585597263  
iteration: 72 HingeLoss: 8.136790329380856  
iteration: 73 HingeLoss: 6.580978949120729  
iteration: 74 HingeLoss: 5.322649616813419  
iteration: 75 HingeLoss: 4.304921678430416  
iteration: 76 HingeLoss: 3.481790459939225  
iteration: 77 HingeLoss: 2.8160477036469205  
iteration: 78 HingeLoss: 2.2775996317002676  
iteration: 79 HingeLoss: 1.8421066076413333  
iteration: 80 HingeLoss: 1.4898829042146717

# Output\_hinge\_train.txt

```

iteration: 81 HingeLoss: 1.205006843286532
iteration: 82 HingeLoss: 0.97460108325275
iteration: 83 HingeLoss: 0.7882505205421272
iteration: 84 HingeLoss: 0.6375314924350417
iteration: 85 HingeLoss: 0.5156309996051942
iteration: 86 HingeLoss: 0.4170387359820376
iteration: 87 HingeLoss: 0.33729800466353455
iteration: 88 HingeLoss: 0.2728042604534028
iteration: 89 HingeLoss: 0.22064217247821125
iteration: 90 HingeLoss: 0.1784538415748831
iteration: 91 HingeLoss: 0.1443322154379998
iteration: 92 HingeLoss: 0.11673488353849591
iteration: 93 HingeLoss: 0.09441435505852062
iteration: 94 HingeLoss: 0.07636166817416482
iteration: 95 HingeLoss: 0.06176078163884052
iteration: 96 HingeLoss: 0.049951687015803804
iteration: 97 HingeLoss: 0.04040057411053943
iteration: 98 HingeLoss: 0.032675700981726376
iteration: 99 HingeLoss: 0.026427877775347237
[-0.00273762 -0.00058717 -0.00263437 ... 0.00155885 0.00016246
0.00025454]

```

## CROSS VALIDATION 8

```

iteration: 0 HingeLoss: 1692.5996827573897
iteration: 1 HingeLoss: 224.9739213119413
iteration: 2 HingeLoss: 236.4454517500069
iteration: 3 HingeLoss: 180.82471957414262
iteration: 4 HingeLoss: 146.24976493509337
iteration: 5 HingeLoss: 118.28578412256326
iteration: 6 HingeLoss: 95.66871257331026
iteration: 7 HingeLoss: 77.37618373439676
iteration: 8 HingeLoss: 62.58131470841395
iteration: 9 HingeLoss: 50.615328407474095
iteration: 10 HingeLoss: 40.937322613518226
iteration: 11 HingeLoss: 33.10981940632442
iteration: 12 HingeLoss: 26.778989712371022
iteration: 13 HingeLoss: 21.658659058656617
iteration: 14 HingeLoss: 17.5173715385693
iteration: 15 HingeLoss: 14.167927238211517
iteration: 16 HingeLoss: 11.458920180193317
iteration: 17 HingeLoss: 9.26789427192295
iteration: 18 HingeLoss: 7.49580788458666
iteration: 19 HingeLoss: 6.062556843451507
iteration: 20 HingeLoss: 4.903353453822872
iteration: 21 HingeLoss: 3.965797882635392
iteration: 22 HingeLoss: 3.207509512424288
iteration: 23 HingeLoss: 2.5942111970304276
iteration: 24 HingeLoss: 2.0981798210510845
iteration: 25 HingeLoss: 1.6969931231910902
iteration: 26 HingeLoss: 1.3725161357786873
iteration: 27 HingeLoss: 1.1100814241547947
iteration: 28 HingeLoss: 0.8978260700406351
iteration: 29 HingeLoss: 0.7261554283356846

```

Output\_hinge\_train.txt

iteration: 30 HingeLoss: 0.587309417376927  
iteration: 31 HingeLoss: 0.4750117375424635  
iteration: 32 HingeLoss: 0.3841861617183979  
iteration: 33 HingeLoss: 0.310727073018318  
iteration: 34 HingeLoss: 0.2513138773001968  
iteration: 35 HingeLoss: 0.20326090131172792  
iteration: 36 HingeLoss: 0.164395991363043  
iteration: 37 HingeLoss: 0.13296232478468462  
iteration: 38 HingeLoss: 0.10753899572348258  
iteration: 39 HingeLoss: 0.08697678549124832  
iteration: 40 HingeLoss: 0.07034621407328909  
iteration: 41 HingeLoss: 0.0568955245528469  
iteration: 42 HingeLoss: 0.046016701208270894  
iteration: 43 HingeLoss: 0.03721798518835031  
iteration: 44 HingeLoss: 0.030101645383291766  
iteration: 45 HingeLoss: 0.024345999661074463  
iteration: 46 HingeLoss: 0.019690873769512857  
iteration: 47 HingeLoss: 0.015925840598232294  
iteration: 48 HingeLoss: 0.01288070817624152  
iteration: 49 HingeLoss: 0.010417826431084014  
iteration: 50 HingeLoss: 0.00842586494959791  
iteration: 51 HingeLoss: 0.006814780474459802  
iteration: 52 HingeLoss: 0.00551174665068597  
iteration: 53 HingeLoss: 0.004457862033150248  
iteration: 54 HingeLoss: 0.003605487546153672  
iteration: 55 HingeLoss: 0.0029160930393987107  
iteration: 56 HingeLoss: 0.002358515597564949  
iteration: 57 HingeLoss: 0.0019075508733096315  
iteration: 58 HingeLoss: 0.07727361190165064  
iteration: 59 HingeLoss: 2682.0859235216826  
iteration: 60 HingeLoss: 507.9462962628121  
iteration: 61 HingeLoss: 197.6200885049924  
iteration: 62 HingeLoss: 159.83374152811547  
iteration: 63 HingeLoss: 129.27240911660184  
iteration: 64 HingeLoss: 104.55461781122398  
iteration: 65 HingeLoss: 84.56304156744625  
iteration: 66 HingeLoss: 68.39399491707566  
iteration: 67 HingeLoss: 55.31658339164724  
iteration: 68 HingeLoss: 44.739664671365794  
iteration: 69 HingeLoss: 36.185126994095974  
iteration: 70 HingeLoss: 29.26627691997144  
iteration: 71 HingeLoss: 23.67035950699313  
iteration: 72 HingeLoss: 19.14442075165215  
iteration: 73 HingeLoss: 15.483873230062636  
iteration: 74 HingeLoss: 12.523248068707439  
iteration: 75 HingeLoss: 10.128715203240539  
iteration: 76 HingeLoss: 8.192033816267335  
iteration: 77 HingeLoss: 6.6256594938513915  
iteration: 78 HingeLoss: 5.358786928014126  
iteration: 79 HingeLoss: 4.334149282272059  
iteration: 80 HingeLoss: 3.505429540931713  
iteration: 81 HingeLoss: 2.835166826555418

# Output\_hinge\_train.txt

```

iteration: 82 HingeLoss: 2.29306304421222
iteration: 83 HingeLoss: 1.854613307224739
iteration: 84 HingeLoss: 1.4999982351190668
iteration: 85 HingeLoss: 1.2131880519757672
iteration: 86 HingeLoss: 0.9812179874597824
iteration: 87 HingeLoss: 0.7936022262555688
iteration: 88 HingeLoss: 0.6418599144806335
iteration: 89 HingeLoss: 0.5191317969972683
iteration: 90 HingeLoss: 0.41987015635908587
iteration: 91 HingeLoss: 0.33958803760566175
iteration: 92 HingeLoss: 0.2746564230353135
iteration: 93 HingeLoss: 0.22214018858388507
iteration: 94 HingeLoss: 0.1796654264944657
iteration: 95 HingeLoss: 0.1453121368232239
iteration: 96 HingeLoss: 0.11752743708195733
iteration: 97 HingeLoss: 0.0950553668057125
iteration: 98 HingeLoss: 0.07688011397940772
iteration: 99 HingeLoss: 0.06218009696988008
[-0.0035958 -0.00117583 -0.0010317 ... 0.00230808 0.00053407
 0.00035802]

```

## CROSS VALIDATION 9

```

iteration: 0 HingeLoss: 1733.571449720845
iteration: 1 HingeLoss: 237.3512218766503
iteration: 2 HingeLoss: 202.71074512449812
iteration: 3 HingeLoss: 163.95102889746062
iteration: 4 HingeLoss: 132.60244226337002
iteration: 5 HingeLoss: 107.24792526436359
iteration: 6 HingeLoss: 86.74136974540363
iteration: 7 HingeLoss: 70.15581146919332
iteration: 8 HingeLoss: 56.74152826208743
iteration: 9 HingeLoss: 45.892150088393635
iteration: 10 HingeLoss: 37.117249116162036
iteration: 11 HingeLoss: 30.020170754641892
iteration: 12 HingeLoss: 24.280103552863803
iteration: 13 HingeLoss: 19.63757745936984
iteration: 14 HingeLoss: 15.88273491639477
iteration: 15 HingeLoss: 12.84584460310312
iteration: 16 HingeLoss: 10.389629017653498
iteration: 17 HingeLoss: 8.403059079384462
iteration: 18 HingeLoss: 6.796335246585471
iteration: 19 HingeLoss: 5.49682827975113
iteration: 20 HingeLoss: 4.445796159371638
iteration: 21 HingeLoss: 3.595728752068358
iteration: 22 HingeLoss: 2.908200195188095
iteration: 23 HingeLoss: 2.3521319205257125
iteration: 24 HingeLoss: 1.9023878000937096
iteration: 25 HingeLoss: 1.5386379098739085
iteration: 26 HingeLoss: 1.2444395499090841
iteration: 27 HingeLoss: 1.0064939797985577
iteration: 28 HingeLoss: 0.8140452715800847
iteration: 29 HingeLoss: 0.6583941061570211
iteration: 30 HingeLoss: 0.5325045352587092

```

# Output\_hinge\_train.txt

```

iteration: 31 HingeLoss: 0.4306859332721109
iteration: 32 HingeLoss: 0.3483357621139349
iteration: 33 HingeLoss: 0.2817315212633926
iteration: 34 HingeLoss: 0.22786247840789883
iteration: 35 HingeLoss: 0.18429357436950966
iteration: 36 HingeLoss: 0.14905535036396156
iteration: 37 HingeLoss: 0.12055492193980209
iteration: 38 HingeLoss: 0.09750397532476407
iteration: 39 HingeLoss: 0.07886053137572795
iteration: 40 HingeLoss: 0.0637818446699032
iteration: 41 HingeLoss: 0.051586308620128855
iteration: 42 HingeLoss: 0.041722644599316516
iteration: 43 HingeLoss: 0.03374498232039864
iteration: 44 HingeLoss: 0.027292705022410546
iteration: 45 HingeLoss: 0.022074148398354077
iteration: 46 HingeLoss: 0.017853416402384914
iteration: 47 HingeLoss: 0.014439717967136315
iteration: 48 HingeLoss: 0.011678742615479834
iteration: 49 HingeLoss: 0.009445685115806615
iteration: 50 HingeLoss: 0.007639603872142087
iteration: 51 HingeLoss: 0.006178858029639539
iteration: 52 HingeLoss: 0.0049974170375061775
iteration: 53 HingeLoss: 0.004041875849381498
iteration: 54 HingeLoss: 0.0032690408383379208
iteration: 55 HingeLoss: 0.0026439773018650256
iteration: 56 HingeLoss: 0.00213843029759509
iteration: 57 HingeLoss: 0.0017295474263137479
iteration: 58 HingeLoss: 0.0013988458278170707
iteration: 59 HingeLoss: 0.0011313766944059847
iteration: 60 HingeLoss: 12763.908782367087
iteration: 61 HingeLoss: 4768.355261222098
iteration: 62 HingeLoss: 2119.9615094528563
iteration: 63 HingeLoss: 193.3199963774538
iteration: 64 HingeLoss: 156.35585717506447
iteration: 65 HingeLoss: 126.45952064480964
iteration: 66 HingeLoss: 102.27957334408978
iteration: 67 HingeLoss: 82.7230015589847
iteration: 68 HingeLoss: 66.90578346378305
iteration: 69 HingeLoss: 54.11292840614334
iteration: 70 HingeLoss: 43.766156961206086
iteration: 71 HingeLoss: 35.39776078604289
iteration: 72 HingeLoss: 28.629460653275203
iteration: 73 HingeLoss: 23.15530697694906
iteration: 74 HingeLoss: 18.727849877793915
iteration: 75 HingeLoss: 15.14695362900338
iteration: 76 HingeLoss: 12.250749858435148
iteration: 77 HingeLoss: 9.90832056200225
iteration: 78 HingeLoss: 8.01378017622319
iteration: 79 HingeLoss: 6.481489200007291
iteration: 80 HingeLoss: 5.242183005525103
iteration: 81 HingeLoss: 4.239840847591827
iteration: 82 HingeLoss: 3.4291535404166087

```

# Output\_hinge\_train.txt

```

iteration: 83 HingeLoss: 2.773475332318375
iteration: 84 HingeLoss: 2.243167396361027
iteration: 85 HingeLoss: 10275.879668103113
iteration: 86 HingeLoss: 1348.1318594496893
iteration: 87 HingeLoss: 96.04128932358412
iteration: 88 HingeLoss: 77.67752119686412
iteration: 89 HingeLoss: 62.82503433455678
iteration: 90 HingeLoss: 50.812447131713796
iteration: 91 HingeLoss: 41.09675085514499
iteration: 92 HingeLoss: 33.2387638499649
iteration: 93 HingeLoss: 26.883279074005408
iteration: 94 HingeLoss: 21.74300756288867
iteration: 95 HingeLoss: 17.585592017194216
iteration: 96 HingeLoss: 14.223103482843058
iteration: 97 HingeLoss: 11.503546339859811
iteration: 98 HingeLoss: 9.303987596865204
iteration: 99 HingeLoss: 7.524999912650971
[-0.06461236 -0.02308594 -0.01988343 ... 0.01981249 0.00265945
0.00655897]

```

## CROSS VALIDATION 10

```

iteration: 0 HingeLoss: 995.3161560501173
iteration: 1 HingeLoss: 211.83678094913077
iteration: 2 HingeLoss: 171.33210266483619
iteration: 3 HingeLoss: 138.57220295753572
iteration: 4 HingeLoss: 112.07622584349167
iteration: 5 HingeLoss: 90.64646538938678
iteration: 6 HingeLoss: 73.31422543674496
iteration: 7 HingeLoss: 59.29603132676798
iteration: 8 HingeLoss: 47.958214250502415
iteration: 9 HingeLoss: 38.78826731965129
iteration: 10 HingeLoss: 31.37167855754691
iteration: 11 HingeLoss: 25.373193584737226
iteration: 12 HingeLoss: 20.521661010506406
iteration: 13 HingeLoss: 16.59777549182722
iteration: 14 HingeLoss: 13.424164405408526
iteration: 15 HingeLoss: 10.857370017576882
iteration: 16 HingeLoss: 8.78136471951157
iteration: 17 HingeLoss: 7.10230619498517
iteration: 18 HingeLoss: 5.744295436817978
iteration: 19 HingeLoss: 4.645945860338505
iteration: 20 HingeLoss: 3.7576084264136087
iteration: 21 HingeLoss: 3.0391273404175685
iteration: 22 HingeLoss: 2.4580248772991475
iteration: 23 HingeLoss: 1.988033280827039
iteration: 24 HingeLoss: 1.607907373996409
iteration: 25 HingeLoss: 1.3004642066537722
iteration: 26 HingeLoss: 1.051806329231624
iteration: 27 HingeLoss: 0.8506935819927861
iteration: 28 HingeLoss: 0.6880350025773153
iteration: 29 HingeLoss: 0.556477884390082
iteration: 30 HingeLoss: 0.45007540990687267
iteration: 31 HingeLoss: 0.3640178348234997

```

# Output\_hinge\_train.txt

```

iteration: 32 HingeLoss: 0.29441507168100295
iteration: 33 HingeLoss: 0.2381208450266139
iteration: 34 HingeLoss: 0.19259046934127236
iteration: 35 HingeLoss: 0.15576582082490945
iteration: 36 HingeLoss: 0.12598230338316221
iteration: 37 HingeLoss: 0.10189360336994424
iteration: 38 HingeLoss: 0.08241083175098651
iteration: 39 HingeLoss: 0.0666533027125501
iteration: 40 HingeLoss: 0.05390872374537892
iteration: 41 HingeLoss: 0.043600997663817
iteration: 42 HingeLoss: 0.03526418110469797
iteration: 43 HingeLoss: 0.028521422343895764
iteration: 44 HingeLoss: 0.023067926350074933
iteration: 45 HingeLoss: 0.018657177039642592
iteration: 46 HingeLoss: 0.015089793933187068
iteration: 47 HingeLoss: 0.012204519497361814
iteration: 48 HingeLoss: 0.009870929770213595
iteration: 49 HingeLoss: 0.007983538766073587
iteration: 50 HingeLoss: 0.006457030159583502
iteration: 51 HingeLoss: 0.005222400705179539
iteration: 52 HingeLoss: 0.00422384106182013
iteration: 53 HingeLoss: 0.0034162130259026997
iteration: 54 HingeLoss: 1938.049300801276
iteration: 55 HingeLoss: 225.04668350859293
iteration: 56 HingeLoss: 182.0161792041873
iteration: 57 HingeLoss: 147.21340912729264
iteration: 58 HingeLoss: 119.06517278647003
iteration: 59 HingeLoss: 96.29907665825328
iteration: 60 HingeLoss: 77.88601778509275
iteration: 61 HingeLoss: 62.99366491277647
iteration: 62 HingeLoss: 50.94883436064789
iteration: 63 HingeLoss: 41.207059889323155
iteration: 64 HingeLoss: 33.32798102312999
iteration: 65 HingeLoss: 26.955437297915807
iteration: 66 HingeLoss: 21.801368628288813
iteration: 67 HingeLoss: 17.63279403756087
iteration: 68 HingeLoss: 14.261280145853195
iteration: 69 HingeLoss: 11.534423357141462
iteration: 70 HingeLoss: 9.328960711879404
iteration: 71 HingeLoss: 7.545197992919674
iteration: 72 HingeLoss: 6.102503216662175
iteration: 73 HingeLoss: 4.935661800302425
iteration: 74 HingeLoss: 3.9919286466659076
iteration: 75 HingeLoss: 3.2286438910979443
iteration: 76 HingeLoss: 2.6113045342707717
iteration: 77 HingeLoss: 2.112004792322955
iteration: 78 HingeLoss: 1.7081746629911085
iteration: 79 HingeLoss: 1.381559686744597
iteration: 80 HingeLoss: 1.1173957847469622
iteration: 81 HingeLoss: 0.903741873586601
iteration: 82 HingeLoss: 0.7309400887517895
iteration: 83 HingeLoss: 0.5911792171631375

```

# Output\_hinge\_train.txt

```

iteration: 84 HingeLoss: 0.4781416044678043
iteration: 85 HingeLoss: 0.3867175761355599
iteration: 86 HingeLoss: 0.3127744632442511
iteration: 87 HingeLoss: 0.2529697921550813
iteration: 88 HingeLoss: 0.20460019363221235
iteration: 89 HingeLoss: 0.16547920159841079
iteration: 90 HingeLoss: 0.1338384176257017
iteration: 91 HingeLoss: 0.10824757346861509
iteration: 92 HingeLoss: 0.08754987820173575
iteration: 93 HingeLoss: 0.0708097274380115
iteration: 94 HingeLoss: 0.05727041091127499
iteration: 95 HingeLoss: 0.04631990666561431
iteration: 96 HingeLoss: 0.0374632156356473
iteration: 97 HingeLoss: 0.03029998604908446
iteration: 98 HingeLoss: 0.024506416200458923
iteration: 99 HingeLoss: 0.019820617541448073
[-0.00132123 -0.00140615 -0.00066192 ... 0.00102408 -0.00015583
0.00024712]

```

## CROSS VALIDATION 11

```

iteration: 0 HingeLoss: 1931.8835638221985
iteration: 1 HingeLoss: 237.80472996699856
iteration: 2 HingeLoss: 202.74780221446687
iteration: 3 HingeLoss: 163.98100041191879
iteration: 4 HingeLoss: 132.62668301405157
iteration: 5 HingeLoss: 107.26753101349664
iteration: 6 HingeLoss: 86.75722673779293
iteration: 7 HingeLoss: 70.16863649342106
iteration: 8 HingeLoss: 56.75190105173154
iteration: 9 HingeLoss: 45.90053952790578
iteration: 10 HingeLoss: 37.124034435998155
iteration: 11 HingeLoss: 30.025658673734924
iteration: 12 HingeLoss: 24.284542143335443
iteration: 13 HingeLoss: 19.641167360212222
iteration: 14 HingeLoss: 15.885638403017461
iteration: 15 HingeLoss: 12.84819292271927
iteration: 16 HingeLoss: 10.391528322088556
iteration: 17 HingeLoss: 8.404595223490322
iteration: 18 HingeLoss: 6.797577669164186
iteration: 19 HingeLoss: 5.4978331424187745
iteration: 20 HingeLoss: 4.446608885249386
iteration: 21 HingeLoss: 3.596386079058041
iteration: 22 HingeLoss: 2.9087318366470307
iteration: 23 HingeLoss: 2.3525619084089078
iteration: 24 HingeLoss: 1.9027355712778182
iteration: 25 HingeLoss: 1.5389191847684405
iteration: 26 HingeLoss: 1.2446670430709947
iteration: 27 HingeLoss: 1.0066779746723338
iteration: 28 HingeLoss: 0.8141940853435042
iteration: 29 HingeLoss: 0.6585144656851347
iteration: 30 HingeLoss: 0.5326018812008776
iteration: 31 HingeLoss: 0.43076466598737817
iteration: 32 HingeLoss: 0.34839944058183286

```



# Output\_hinge\_train.txt

```

iteration: 33 HingeLoss: 0.2817830239616046
iteration: 34 HingeLoss: 0.2279041334289864
iteration: 35 HingeLoss: 0.18432726465840807
iteration: 36 HingeLoss: 0.1490825988333279
iteration: 37 HingeLoss: 0.12057696031071206
iteration: 38 HingeLoss: 0.09752179980458478
iteration: 39 HingeLoss: 0.07887494768999083
iteration: 40 HingeLoss: 0.06379350448376679
iteration: 41 HingeLoss: 0.0515957389958029
iteration: 42 HingeLoss: 0.04173027182101956
iteration: 43 HingeLoss: 0.033751151163816724
iteration: 44 HingeLoss: 0.027297694339700473
iteration: 45 HingeLoss: 0.02207818372318443
iteration: 46 HingeLoss: 0.01785668014480501
iteration: 47 HingeLoss: 0.014442357659114669
iteration: 48 HingeLoss: 0.01168087757983783
iteration: 49 HingeLoss: 0.009447411860005283
iteration: 50 HingeLoss: 0.007641000450739051
iteration: 51 HingeLoss: 0.006179987572613533
iteration: 52 HingeLoss: 0.004998330603941229
iteration: 53 HingeLoss: 0.06293263485206763
iteration: 54 HingeLoss: 1027.8749413168218
iteration: 55 HingeLoss: 1703.043246846193
iteration: 56 HingeLoss: 383.9297870008254
iteration: 57 HingeLoss: 783.3361196119126
iteration: 58 HingeLoss: 158.76410796856842
iteration: 59 HingeLoss: 128.4072969957654
iteration: 60 HingeLoss: 103.85492119555771
iteration: 61 HingeLoss: 83.99713185218127
iteration: 62 HingeLoss: 67.9362911085095
iteration: 63 HingeLoss: 54.94639576149165
iteration: 64 HingeLoss: 44.44025951249352
iteration: 65 HingeLoss: 35.942970201548235
iteration: 66 HingeLoss: 29.07042220458214
iteration: 67 HingeLoss: 23.51195358685912
iteration: 68 HingeLoss: 19.016303154464737
iteration: 69 HingeLoss: 15.380252616040195
iteration: 70 HingeLoss: 12.439440442853504
iteration: 71 HingeLoss: 10.060932183254266
iteration: 72 HingeLoss: 8.13721138511451
iteration: 73 HingeLoss: 6.581319496044928
iteration: 74 HingeLoss: 5.322925048777208
iteration: 75 HingeLoss: 4.30514444587092
iteration: 76 HingeLoss: 3.481970632682677
iteration: 77 HingeLoss: 2.8161934260981374
iteration: 78 HingeLoss: 2.277717490996755
iteration: 79 HingeLoss: 1.8422019314136993
iteration: 80 HingeLoss: 1.489960001413185
iteration: 81 HingeLoss: 1.205069198959951
iteration: 82 HingeLoss: 0.974651516084065
iteration: 83 HingeLoss: 0.7882913102623718
iteration: 84 HingeLoss: 0.6375644828746876

```

# Output\_hinge\_train.txt

```

iteration: 85 HingeLoss: 0.5156576820413935
iteration: 86 HingeLoss: 0.41706031654929254
iteration: 87 HingeLoss: 0.33731545887496955
iteration: 88 HingeLoss: 0.2728183772971923
iteration: 89 HingeLoss: 0.22065359008245633
iteration: 90 HingeLoss: 0.17846307605311662
iteration: 91 HingeLoss: 0.1443396842192268
iteration: 92 HingeLoss: 0.11674092423636827
iteration: 93 HingeLoss: 0.09441924073259193
iteration: 94 HingeLoss: 0.07636561967308692
iteration: 95 HingeLoss: 0.06176397758345398
iteration: 96 HingeLoss: 0.04995427187339163
iteration: 97 HingeLoss: 0.04040266472522695
iteration: 98 HingeLoss: 0.03267739185622264
iteration: 99 HingeLoss: 0.026429245342780475
[-0.0027377 -0.00058758 -0.00263479 ... 0.00155885 0.00016246
0.00025454]

```

## CROSS VALIDATION 12

```

iteration: 0 HingeLoss: 1360.0947585488088
iteration: 1 HingeLoss: 563.7604470080535
iteration: 2 HingeLoss: 413.9648496239572
iteration: 3 HingeLoss: 158.2680736585629
iteration: 4 HingeLoss: 128.00610792488555
iteration: 5 HingeLoss: 103.53044228886354
iteration: 6 HingeLoss: 83.73469558825575
iteration: 7 HingeLoss: 67.72403449890466
iteration: 8 HingeLoss: 54.77472410435465
iteration: 9 HingeLoss: 44.30141268026043
iteration: 10 HingeLoss: 35.830671857472844
iteration: 11 HingeLoss: 28.979596091524673
iteration: 12 HingeLoss: 23.438494063648434
iteration: 13 HingeLoss: 18.956889607317493
iteration: 14 HingeLoss: 15.332199355818313
iteration: 15 HingeLoss: 12.400575303018828
iteration: 16 HingeLoss: 10.029498330745728
iteration: 17 HingeLoss: 8.111787905674278
iteration: 18 HingeLoss: 6.560757164187198
iteration: 19 HingeLoss: 5.306294378989396
iteration: 20 HingeLoss: 4.291693676789635
iteration: 21 HingeLoss: 3.471091744989847
iteration: 22 HingeLoss: 2.8073946580338007
iteration: 23 HingeLoss: 2.270601109098537
iteration: 24 HingeLoss: 1.8364462516468292
iteration: 25 HingeLoss: 1.4853048479865478
iteration: 26 HingeLoss: 1.2013041435184935
iteration: 27 HingeLoss: 0.9716063656501119
iteration: 28 HingeLoss: 0.7858284139492655
iteration: 29 HingeLoss: 0.6355725096107466
iteration: 30 HingeLoss: 0.5140465880366888
iteration: 31 HingeLoss: 0.4157572750180717
iteration: 32 HingeLoss: 0.336261568023705
iteration: 33 HingeLoss: 0.27196599776839964

```

# Output\_hinge\_train.txt

```

iteration: 34 HingeLoss: 0.21996419149793206
iteration: 35 HingeLoss: 0.17790549531321154
iteration: 36 HingeLoss: 0.14388871682751456
iteration: 37 HingeLoss: 0.11637618497291671
iteration: 38 HingeLoss: 0.09412424217449647
iteration: 39 HingeLoss: 0.07612702690834064
iteration: 40 HingeLoss: 0.061571005428753406
iteration: 41 HingeLoss: 0.04979819734812514
iteration: 42 HingeLoss: 0.08373111403227318
iteration: 43 HingeLoss: 572.3756665657033
iteration: 44 HingeLoss: 216.4332011996413
iteration: 45 HingeLoss: 175.04965512538053
iteration: 46 HingeLoss: 141.5789333137001
iteration: 47 HingeLoss: 114.5080482671506
iteration: 48 HingeLoss: 92.61330630948663
iteration: 49 HingeLoss: 74.90499257802287
iteration: 50 HingeLoss: 60.58263263341604
iteration: 51 HingeLoss: 48.998808363440105
iteration: 52 HingeLoss: 39.62989253974504
iteration: 53 HingeLoss: 32.052379132623365
iteration: 54 HingeLoss: 25.923739435606333
iteration: 55 HingeLoss: 20.96693863330722
iteration: 56 HingeLoss: 16.957912910089735
iteration: 57 HingeLoss: 13.715441023391216
iteration: 58 HingeLoss: 11.092952503264586
iteration: 59 HingeLoss: 8.971902181622902
iteration: 60 HingeLoss: 7.256411557961752
iteration: 61 HingeLoss: 5.8689347735394275
iteration: 62 HingeLoss: 4.746753281691665
iteration: 63 HingeLoss: 3.839140761767613
iteration: 64 HingeLoss: 3.1050701214057765
iteration: 65 HingeLoss: 2.5113589360572894
iteration: 66 HingeLoss: 2.031169493479726
iteration: 67 HingeLoss: 1.6427956402439847
iteration: 68 HingeLoss: 1.3286815916977934
iteration: 69 HingeLoss: 1.0746283523459976
iteration: 70 HingeLoss: 0.8691518742200931
iteration: 71 HingeLoss: 0.7029639398692105
iteration: 72 HingeLoss: 0.5685523041641725
iteration: 73 HingeLoss: 0.45984111593338917
iteration: 74 HingeLoss: 0.3719162693636825
iteration: 75 HingeLoss: 0.3008032701395844
iteration: 76 HingeLoss: 0.24328757513479032
iteration: 77 HingeLoss: 0.19676928441469502
iteration: 78 HingeLoss: 0.15914561714719655
iteration: 79 HingeLoss: 0.12871585894363596
iteration: 80 HingeLoss: 0.14787766099446834
iteration: 81 HingeLoss: 2184.0326371377746
iteration: 82 HingeLoss: 1017.2907128917744
iteration: 83 HingeLoss: 189.7752769783905
iteration: 84 HingeLoss: 153.48891298682082
iteration: 85 HingeLoss: 124.14075629334198

```

# Output\_hinge\_train.txt

```

iteration: 86 HingeLoss: 100.40417299981902
iteration: 87 HingeLoss: 81.20619091409753
iteration: 88 HingeLoss: 65.67899765270458
iteration: 89 HingeLoss: 53.12071264649235
iteration: 90 HingeLoss: 42.96365981393772
iteration: 91 HingeLoss: 34.74870672183372
iteration: 92 HingeLoss: 28.104510278435352
iteration: 93 HingeLoss: 22.730730795640834
iteration: 94 HingeLoss: 18.384455640216217
iteration: 95 HingeLoss: 14.869218778126342
iteration: 96 HingeLoss: 12.026119859004156
iteration: 97 HingeLoss: 9.726641393957518
iteration: 98 HingeLoss: 7.866839339357956
iteration: 99 HingeLoss: 6.362644481754622
[-0.05611046 -0.00164631 -0.02370826 ... 0.02482139 0.00888047
0.00569783]

```

## CROSS VALIDATION 13

```

iteration: 0 HingeLoss: 1938.1675461195132
iteration: 1 HingeLoss: 238.62847133818892
iteration: 2 HingeLoss: 202.7790968754499
iteration: 3 HingeLoss: 164.00631131422938
iteration: 4 HingeLoss: 132.64715429431638
iteration: 5 HingeLoss: 107.28408804139474
iteration: 6 HingeLoss: 86.77061794583032
iteration: 7 HingeLoss: 70.17946720855932
iteration: 8 HingeLoss: 56.760660858171605
iteration: 9 HingeLoss: 45.90762439791557
iteration: 10 HingeLoss: 37.12976462917069
iteration: 11 HingeLoss: 30.030293213782812
iteration: 12 HingeLoss: 24.288290526820738
iteration: 13 HingeLoss: 19.644199026484962
iteration: 14 HingeLoss: 15.888090393435562
iteration: 15 HingeLoss: 12.85017607537182
iteration: 16 HingeLoss: 10.393132282044627
iteration: 17 HingeLoss: 8.40589249505305
iteration: 18 HingeLoss: 6.798626893305403
iteration: 19 HingeLoss: 5.498681747545207
iteration: 20 HingeLoss: 4.447295231123756
iteration: 21 HingeLoss: 3.5969411907873816
iteration: 22 HingeLoss: 2.9091808071203182
iteration: 23 HingeLoss: 2.3529250325787436
iteration: 24 HingeLoss: 1.9030292635595238
iteration: 25 HingeLoss: 1.5391567210260046
iteration: 26 HingeLoss: 1.2448591607300976
iteration: 27 HingeLoss: 1.0068333580875535
iteration: 28 HingeLoss: 0.8143197583599163
iteration: 29 HingeLoss: 0.6586161091393716
iteration: 30 HingeLoss: 0.5326840897137647
iteration: 31 HingeLoss: 0.43083115565601227
iteration: 32 HingeLoss: 0.3484532169594831
iteration: 33 HingeLoss: 0.281826517918675
iteration: 34 HingeLoss: 0.2279393110364099

```

# Output\_hinge\_train.txt

```

iteration: 35 HingeLoss: 0.1843557160605658
iteration: 36 HingeLoss: 0.14910561012784254
iteration: 37 HingeLoss: 0.12059557168432039
iteration: 38 HingeLoss: 0.09753685255302394
iteration: 39 HingeLoss: 0.07888712224735243
iteration: 40 HingeLoss: 0.06380335118037175
iteration: 41 HingeLoss: 0.05160370293495491
iteration: 42 HingeLoss: 0.041736712999148745
iteration: 43 HingeLoss: 0.03375636074351091
iteration: 44 HingeLoss: 0.02730190781121853
iteration: 45 HingeLoss: 0.02208159154939605
iteration: 46 HingeLoss: 0.01785943637074339
iteration: 47 HingeLoss: 0.014444586875322197
iteration: 48 HingeLoss: 0.011682680554271345
iteration: 49 HingeLoss: 0.009448870093081534
iteration: 50 HingeLoss: 0.007642179859423459
iteration: 51 HingeLoss: 0.006180941470085422
iteration: 52 HingeLoss: 0.004999102109526109
iteration: 53 HingeLoss: 0.06487039639206832
iteration: 54 HingeLoss: 2928.297559936339
iteration: 55 HingeLoss: 520.3257690158362
iteration: 56 HingeLoss: 607.5744623643636
iteration: 57 HingeLoss: 196.19132006648573
iteration: 58 HingeLoss: 158.678163636053
iteration: 59 HingeLoss: 128.33778582241757
iteration: 60 HingeLoss: 103.79870104608688
iteration: 61 HingeLoss: 83.95166138960246
iteration: 62 HingeLoss: 67.8995149172935
iteration: 63 HingeLoss: 54.91665143597454
iteration: 64 HingeLoss: 44.41620251063407
iteration: 65 HingeLoss: 35.923513067173715
iteration: 66 HingeLoss: 29.054685410767195
iteration: 67 HingeLoss: 23.499225778395274
iteration: 68 HingeLoss: 19.00600899224865
iteration: 69 HingeLoss: 15.371926769840337
iteration: 70 HingeLoss: 12.432706556842327
iteration: 71 HingeLoss: 10.055485863478108
iteration: 72 HingeLoss: 8.132806439878589
iteration: 73 HingeLoss: 6.577756807233235
iteration: 74 HingeLoss: 5.32004357105406
iteration: 75 HingeLoss: 4.302813926898358
iteration: 76 HingeLoss: 3.480085725283308
iteration: 77 HingeLoss: 2.8146689262137676
iteration: 78 HingeLoss: 2.276484486182712
iteration: 79 HingeLoss: 1.8412046857680684
iteration: 80 HingeLoss: 1.4891534361294154
iteration: 81 HingeLoss: 1.2044168546154717
iteration: 82 HingeLoss: 0.9741239045536201
iteration: 83 HingeLoss: 0.7878645817570752
iteration: 84 HingeLoss: 0.6372193478525635
iteration: 85 HingeLoss: 0.5153785392561848
iteration: 86 HingeLoss: 0.41683454782244883

```

# Output\_hinge\_train.txt

```

iteration: 87 HingeLoss: 0.33713285871218035
iteration: 88 HingeLoss: 0.27267069156623747
iteration: 89 HingeLoss: 0.22053414289908835
iteration: 90 HingeLoss: 0.1783664680089793
iteration: 91 HingeLoss: 0.1442615483107117
iteration: 92 HingeLoss: 0.11667772846158574
iteration: 93 HingeLoss: 0.09436812843318619
iteration: 94 HingeLoss: 0.07632428040381556
iteration: 95 HingeLoss: 0.06173054267240999
iteration: 96 HingeLoss: 0.04992722995184277
iteration: 97 HingeLoss: 0.040380793408743114
iteration: 98 HingeLoss: 0.0326597024888501
iteration: 99 HingeLoss: 0.0264149383065181
[-0.00263814 -0.00084995 -0.00191095 ... 0.00111679 0.00027167
0.00015896]

```

## CROSS VALIDATION 14

```

iteration: 0 HingeLoss: 1938.1675461195132
iteration: 1 HingeLoss: 225.75583151297383
iteration: 2 HingeLoss: 189.2620815215016
iteration: 3 HingeLoss: 153.0738441007054
iteration: 4 HingeLoss: 123.8050514894346
iteration: 5 HingeLoss: 100.13265730896293
iteration: 6 HingeLoss: 80.98659092767191
iteration: 7 HingeLoss: 65.50138672389942
iteration: 8 HingeLoss: 52.97706217299058
iteration: 9 HingeLoss: 42.84747631849565
iteration: 10 HingeLoss: 34.654738325600306
iteration: 11 HingeLoss: 28.028509298631082
iteration: 12 HingeLoss: 22.669261736225817
iteration: 13 HingeLoss: 18.33473989608896
iteration: 14 HingeLoss: 14.829009032969232
iteration: 15 HingeLoss: 11.99359849914154
iteration: 16 HingeLoss: 9.700338346196796
iteration: 17 HingeLoss: 7.845565618811662
iteration: 18 HingeLoss: 6.345438445784999
iteration: 19 HingeLoss: 5.132146109733904
iteration: 20 HingeLoss: 4.150843778045417
iteration: 21 HingeLoss: 3.3571733347692416
iteration: 22 HingeLoss: 2.715258246840794
iteration: 23 HingeLoss: 2.196081825945908
iteration: 24 HingeLoss: 1.7761755780914084
iteration: 25 HingeLoss: 1.4365583499373924
iteration: 26 HingeLoss: 1.1618783177913048
iteration: 27 HingeLoss: 0.9397190343242134
iteration: 28 HingeLoss: 0.760038164022137
iteration: 29 HingeLoss: 0.6147135363556361
iteration: 30 HingeLoss: 0.49717599676724444
iteration: 31 HingeLoss: 0.40211245912518356
iteration: 32 HingeLoss: 0.32522573663064547
iteration: 33 HingeLoss: 0.2630402947400783
iteration: 34 HingeLoss: 0.21274514549113197
iteration: 35 HingeLoss: 0.1720667815353797

```

# Output\_hinge\_train.txt

```

iteration: 36 HingeLoss: 0.13916640607518924
iteration: 37 HingeLoss: 0.11255681315746713
iteration: 38 HingeLoss: 0.09103516103821858
iteration: 39 HingeLoss: 0.0736285997513123
iteration: 40 HingeLoss: 0.05955029506745227
iteration: 41 HingeLoss: 0.048163860980629594
iteration: 42 HingeLoss: 0.0389545929526267
iteration: 43 HingeLoss: 0.03150620156293368
iteration: 44 HingeLoss: 0.02548199484798548
iteration: 45 HingeLoss: 0.020609658709118496
iteration: 46 HingeLoss: 0.016668947413272215
iteration: 47 HingeLoss: 0.013481727756292328
iteration: 48 HingeLoss: 0.010903926852037676
iteration: 49 HingeLoss: 0.00881901956068621
iteration: 50 HingeLoss: 0.00713276116642618
iteration: 51 HingeLoss: 0.005768927204116399
iteration: 52 HingeLoss: 0.004665867860968808
iteration: 53 HingeLoss: 0.0037737212007957852
iteration: 54 HingeLoss: 0.0030521592393271584
iteration: 55 HingeLoss: 0.0196126486279345
iteration: 56 HingeLoss: 1144.4701188839224
iteration: 57 HingeLoss: 1718.7893966015502
iteration: 58 HingeLoss: 219.5556695743646
iteration: 59 HingeLoss: 177.57508564669422
iteration: 60 HingeLoss: 143.6214838066409
iteration: 61 HingeLoss: 116.16004877993538
iteration: 62 HingeLoss: 93.94943273753492
iteration: 63 HingeLoss: 75.98564226179303
iteration: 64 HingeLoss: 61.45665451825995
iteration: 65 HingeLoss: 49.70571113374495
iteration: 66 HingeLoss: 40.201630542339615
iteration: 67 HingeLoss: 32.51479681910363
iteration: 68 HingeLoss: 26.297739617156953
iteration: 69 HingeLoss: 21.269427357007597
iteration: 70 HingeLoss: 17.20256366824317
iteration: 71 HingeLoss: 13.913312840670386
iteration: 72 HingeLoss: 11.252989841259694
iteration: 73 HingeLoss: 9.101339258134038
iteration: 74 HingeLoss: 7.3610993576067445
iteration: 75 HingeLoss: 5.953605531639921
iteration: 76 HingeLoss: 4.815234396985172
iteration: 77 HingeLoss: 3.89452780750868
iteration: 78 HingeLoss: 3.14986677553115
iteration: 79 HingeLoss: 2.5475901557220784
iteration: 80 HingeLoss: 2.0604730498284725
iteration: 81 HingeLoss: 1.6664961510915022
iteration: 82 HingeLoss: 1.3478503986421881
iteration: 83 HingeLoss: 1.0901319489577126
iteration: 84 HingeLoss: 0.8816910744215459
iteration: 85 HingeLoss: 0.7131055570455316
iteration: 86 HingeLoss: 0.5767547730057764
iteration: 87 HingeLoss: 0.4664752152025444

```

# Output\_hinge\_train.txt

```

iteration: 88 HingeLoss: 0.3772818823227678
iteration: 89 HingeLoss: 0.30514294026791106
iteration: 90 HingeLoss: 0.2467974698972892
iteration: 91 HingeLoss: 0.19960806268113612
iteration: 92 HingeLoss: 0.16144160109865863
iteration: 93 HingeLoss: 0.1305728346601578
iteration: 94 HingeLoss: 0.1056063928700133
iteration: 95 HingeLoss: 0.08541370985812463
iteration: 96 HingeLoss: 0.06908200946421526
iteration: 97 HingeLoss: 0.055873044731822745
iteration: 98 HingeLoss: 0.045189726700427965
iteration: 99 HingeLoss: 0.03654913400658615
[-0.0030954 -0.00076441 -0.00236515 ... 0.00136444 -0.00041108
0.00030745]

```

## CROSS VALIDATION 15

```

iteration: 0 HingeLoss: 1938.1675461195132
iteration: 1 HingeLoss: 238.62847133818883
iteration: 2 HingeLoss: 202.83397176289577
iteration: 3 HingeLoss: 164.0506937383177
iteration: 4 HingeLoss: 132.68305048763247
iteration: 5 HingeLoss: 107.31312063078245
iteration: 6 HingeLoss: 86.79409930050029
iteration: 7 HingeLoss: 70.19845876352441
iteration: 8 HingeLoss: 56.776021094625676
iteration: 9 HingeLoss: 45.92004764942697
iteration: 10 HingeLoss: 37.13981246785975
iteration: 11 HingeLoss: 30.038419835241662
iteration: 12 HingeLoss: 24.2948632812587
iteration: 13 HingeLoss: 19.64951502417482
iteration: 14 HingeLoss: 15.892389935082136
iteration: 15 HingeLoss: 12.853653514499724
iteration: 16 HingeLoss: 10.395944810421447
iteration: 17 HingeLoss: 8.40816724827789
iteration: 18 HingeLoss: 6.80046669775914
iteration: 19 HingeLoss: 5.500169768483493
iteration: 20 HingeLoss: 4.448498732022058
iteration: 21 HingeLoss: 3.5979145738728935
iteration: 22 HingeLoss: 2.9099680725328305
iteration: 23 HingeLoss: 2.3535617673227134
iteration: 24 HingeLoss: 1.9035442501545585
iteration: 25 HingeLoss: 1.5395732385720906
iteration: 26 HingeLoss: 1.245196037200027
iteration: 27 HingeLoss: 1.0071058214136712
iteration: 28 HingeLoss: 0.8145401247870947
iteration: 29 HingeLoss: 0.658794339960082
iteration: 30 HingeLoss: 0.5328282415514913
iteration: 31 HingeLoss: 0.43094774465132346
iteration: 32 HingeLoss: 0.34854751332116657
iteration: 33 HingeLoss: 0.2819027841546351
iteration: 34 HingeLoss: 0.22800099463314316
iteration: 35 HingeLoss: 0.18440560532097142
iteration: 36 HingeLoss: 0.1491459602117486

```



Output\_hinge\_train.txt

iteration: 37 HingeLoss: 0.12062820654917886  
iteration: 38 HingeLoss: 0.09756324740282919  
iteration: 39 HingeLoss: 0.07890847021674847  
iteration: 40 HingeLoss: 0.06382061726829029  
iteration: 41 HingeLoss: 0.05161766762576367  
iteration: 42 HingeLoss: 0.041748007543130246  
iteration: 43 HingeLoss: 0.03376549569146623  
iteration: 44 HingeLoss: 0.027309296093054693  
iteration: 45 HingeLoss: 0.022087567139925695  
iteration: 46 HingeLoss: 0.017864269386452563  
iteration: 47 HingeLoss: 0.014448495784530292  
iteration: 48 HingeLoss: 0.011685842052622804  
iteration: 49 HingeLoss: 0.009451427090774282  
iteration: 50 HingeLoss: 0.007644247941223249  
iteration: 51 HingeLoss: 0.006182614120140122  
iteration: 52 HingeLoss: 0.005000454937158827  
iteration: 53 HingeLoss: 0.06542467764746117  
iteration: 54 HingeLoss: 1125.308293447029  
iteration: 55 HingeLoss: 1704.7027095252338  
iteration: 56 HingeLoss: 384.07044525154345  
iteration: 57 HingeLoss: 783.8157938358511  
iteration: 58 HingeLoss: 158.81012732333755  
iteration: 59 HingeLoss: 128.44451712713513  
iteration: 60 HingeLoss: 103.8850245767575  
iteration: 61 HingeLoss: 84.02147925575855  
iteration: 62 HingeLoss: 67.95598311775659  
iteration: 63 HingeLoss: 54.96232252045618  
iteration: 64 HingeLoss: 44.45314096343798  
iteration: 65 HingeLoss: 35.95338862872503  
iteration: 66 HingeLoss: 29.07884855541066  
iteration: 67 HingeLoss: 23.518768760309047  
iteration: 68 HingeLoss: 19.021815218951225  
iteration: 69 HingeLoss: 15.384710735136721  
iteration: 70 HingeLoss: 12.443046138310713  
iteration: 71 HingeLoss: 10.063848444450661  
iteration: 72 HingeLoss: 8.139570036716274  
iteration: 73 HingeLoss: 6.583227156917485  
iteration: 74 HingeLoss: 5.324467951511107  
iteration: 75 HingeLoss: 4.306392334780589  
iteration: 76 HingeLoss: 3.4829799164804527  
iteration: 77 HingeLoss: 2.8170097277549306  
iteration: 78 HingeLoss: 2.2783777100514455  
iteration: 79 HingeLoss: 1.8427359119545323  
iteration: 80 HingeLoss: 1.4903918811294146  
iteration: 81 HingeLoss: 1.2054185002453475  
iteration: 82 HingeLoss: 0.974934028513787  
iteration: 83 HingeLoss: 0.7885198043340647  
iteration: 84 HingeLoss: 0.6377492872772756  
iteration: 85 HingeLoss: 0.5158071505460379  
iteration: 86 HingeLoss: 0.4171812056275164  
iteration: 87 HingeLoss: 0.3374132331135535  
iteration: 88 HingeLoss: 0.2728974564155965

# Output\_hinge\_train.txt

```

iteration: 89 HingeLoss: 0.2207175487187818
iteration: 90 HingeLoss: 0.17851480534958772
iteration: 91 HingeLoss: 0.1443815225113971
iteration: 92 HingeLoss: 0.11677476275363295
iteration: 93 HingeLoss: 0.09444660908802123
iteration: 94 HingeLoss: 0.07638775500700373
iteration: 95 HingeLoss: 0.061781880486274615
iteration: 96 HingeLoss: 0.04996875161562675
iteration: 97 HingeLoss: 0.04041437583918966
iteration: 98 HingeLoss: 0.03268686372305705
iteration: 99 HingeLoss: 0.026436906122242993
[-0.0027362 -0.00058675 -0.0026347 ... 0.00155907 0.0001626
 0.00025486]

```

## CROSS VALIDATION 16

```

iteration: 0 HingeLoss: 1938.1675461195132
iteration: 1 HingeLoss: 194.01613012172106
iteration: 2 HingeLoss: 156.9188852649309
iteration: 3 HingeLoss: 126.91489381496444
iteration: 4 HingeLoss: 102.64787597024473
iteration: 5 HingeLoss: 83.02088213984221
iteration: 6 HingeLoss: 67.14670718832542
iteration: 7 HingeLoss: 54.3077858247783
iteration: 8 HingeLoss: 43.92375627471994
iteration: 9 HingeLoss: 35.52522600545325
iteration: 10 HingeLoss: 28.73255362872716
iteration: 11 HingeLoss: 23.23868785242791
iteration: 12 HingeLoss: 18.79528774506995
iteration: 13 HingeLoss: 15.201496903064964
iteration: 14 HingeLoss: 12.294864075944147
iteration: 15 HingeLoss: 9.943999831718145
iteration: 16 HingeLoss: 8.0426373193245
iteration: 17 HingeLoss: 6.504828654951307
iteration: 18 HingeLoss: 5.261059792987091
iteration: 19 HingeLoss: 4.25510826089432
iteration: 20 HingeLoss: 3.441501717214091
iteration: 21 HingeLoss: 2.783462451105353
iteration: 22 HingeLoss: 2.25124490798894
iteration: 23 HingeLoss: 1.8207910919486308
iteration: 24 HingeLoss: 1.4726430646237703
iteration: 25 HingeLoss: 1.1910633819410594
iteration: 26 HingeLoss: 0.9633237095122603
iteration: 27 HingeLoss: 0.7791294597573177
iteration: 28 HingeLoss: 0.6301544424449815
iteration: 29 HingeLoss: 0.5096644933138992
iteration: 30 HingeLoss: 0.4122130675411261
iteration: 31 HingeLoss: 0.33339503787447966
iteration: 32 HingeLoss: 0.26964756828878594
iteration: 33 HingeLoss: 0.21808906199566797
iteration: 34 HingeLoss: 0.17638890372343985
iteration: 35 HingeLoss: 0.14266210818667716
iteration: 36 HingeLoss: 0.11538411250731401
iteration: 37 HingeLoss: 0.09332186092244932

```

Output\_hinge\_train.txt

iteration: 38 HingeLoss: 0.07547806657937359  
iteration: 39 HingeLoss: 0.06104613086631991  
iteration: 40 HingeLoss: 0.04937368248335946  
iteration: 41 HingeLoss: 0.03993308809866847  
iteration: 42 HingeLoss: 0.03229760157414766  
iteration: 43 HingeLoss: 0.026122073626386234  
iteration: 44 HingeLoss: 0.035170981027441026  
iteration: 45 HingeLoss: 10481.502723131896  
iteration: 46 HingeLoss: 3261.1076300019954  
iteration: 47 HingeLoss: 226.32196547690356  
iteration: 48 HingeLoss: 183.04761831566861  
iteration: 49 HingeLoss: 148.04762984641926  
iteration: 50 HingeLoss: 119.73988465309738  
iteration: 51 HingeLoss: 96.84477888373196  
iteration: 52 HingeLoss: 78.3273779176497  
iteration: 53 HingeLoss: 63.35063389240599  
iteration: 54 HingeLoss: 51.237548367686784  
iteration: 55 HingeLoss: 41.44056975325299  
iteration: 56 HingeLoss: 33.51684216330037  
iteration: 57 HingeLoss: 27.108186863463846  
iteration: 58 HingeLoss: 21.924911405559257  
iteration: 59 HingeLoss: 17.732714569321022  
iteration: 60 HingeLoss: 14.34209517112479  
iteration: 61 HingeLoss: 11.59978598276603  
iteration: 62 HingeLoss: 9.381825545048498  
iteration: 63 HingeLoss: 7.587954699206961  
iteration: 64 HingeLoss: 6.137084540823173  
iteration: 65 HingeLoss: 4.963630932739633  
iteration: 66 HingeLoss: 4.014549884813064  
iteration: 67 HingeLoss: 3.2469397898520196  
iteration: 68 HingeLoss: 2.6261021288605018  
iteration: 69 HingeLoss: 2.1239729830407383  
iteration: 70 HingeLoss: 1.717854451701947  
iteration: 71 HingeLoss: 1.3893886319624595  
iteration: 72 HingeLoss: 1.12372778072903  
iteration: 73 HingeLoss: 0.9088631475259629  
iteration: 74 HingeLoss: 0.7350821391946926  
iteration: 75 HingeLoss: 0.5945292785101176  
iteration: 76 HingeLoss: 0.48085111058880287  
iteration: 77 HingeLoss: 0.38890900568246844  
iteration: 78 HingeLoss: 0.31454687609168713  
iteration: 79 HingeLoss: 0.25440330723485544  
iteration: 80 HingeLoss: 0.2057596105744402  
iteration: 81 HingeLoss: 0.1664169298894427  
iteration: 82 HingeLoss: 0.13459684569051159  
iteration: 83 HingeLoss: 0.10886098476802063  
iteration: 84 HingeLoss: 0.08804600095839127  
iteration: 85 HingeLoss: 0.07121098804392148  
iteration: 86 HingeLoss: 0.05759494767499984  
iteration: 87 HingeLoss: 0.04658238972390048  
iteration: 88 HingeLoss: 0.03767551009220282  
iteration: 89 HingeLoss: 0.03047168831656973

# Output\_hinge\_train.txt

```

iteration: 90 HingeLoss: 4901.287970522643
iteration: 91 HingeLoss: 3936.476693236875
iteration: 92 HingeLoss: 237.91861827038957
iteration: 93 HingeLoss: 182.52574341883405
iteration: 94 HingeLoss: 147.62554109015105
iteration: 95 HingeLoss: 119.39850222744595
iteration: 96 HingeLoss: 96.56867117223057
iteration: 97 HingeLoss: 78.10406393713345
iteration: 98 HingeLoss: 63.17001911122927
iteration: 99 HingeLoss: 51.091468399455074
[-0.08440007 -0.06243973 -0.00441298 ... 0.02945868 -0.00233002
 0.0043345 ]

```

## CROSS VALIDATION 17

```

iteration: 0 HingeLoss: 1938.1675461195132
iteration: 1 HingeLoss: 240.16432849575284
iteration: 2 HingeLoss: 202.8755725174505
iteration: 3 HingeLoss: 164.084340136825
iteration: 4 HingeLoss: 132.7102634587583
iteration: 5 HingeLoss: 107.33513029096444
iteration: 6 HingeLoss: 86.81190055928562
iteration: 7 HingeLoss: 70.21285629677668
iteration: 8 HingeLoss: 56.78766571853962
iteration: 9 HingeLoss: 45.9294657395763
iteration: 10 HingeLoss: 37.14742975311654
iteration: 11 HingeLoss: 30.04458064213175
iteration: 12 HingeLoss: 24.299846098661142
iteration: 13 HingeLoss: 19.653545091941755
iteration: 14 HingeLoss: 15.89564942562621
iteration: 15 HingeLoss: 12.856289767590575
iteration: 16 HingeLoss: 10.398076993431346
iteration: 17 HingeLoss: 8.409891742941737
iteration: 18 HingeLoss: 6.801861456948109
iteration: 19 HingeLoss: 5.501297839933063
iteration: 20 HingeLoss: 4.449411108298476
iteration: 21 HingeLoss: 3.598652497406097
iteration: 22 HingeLoss: 2.9105648999108857
iteration: 23 HingeLoss: 2.354044477120096
iteration: 24 HingeLoss: 1.903934662453083
iteration: 25 HingeLoss: 1.5398890013008888
iteration: 26 HingeLoss: 1.2454514238804033
iteration: 27 HingeLoss: 1.007312376369546
iteration: 28 HingeLoss: 0.8147071849866849
iteration: 29 HingeLoss: 0.6589294570777948
iteration: 30 HingeLoss: 0.532937523328622
iteration: 31 HingeLoss: 0.431036130986193
iteration: 32 HingeLoss: 0.3486189995688908
iteration: 33 HingeLoss: 0.28196060173040893
iteration: 34 HingeLoss: 0.22804775708291203
iteration: 35 HingeLoss: 0.18444342646236508
iteration: 36 HingeLoss: 0.14917654968564037
iteration: 37 HingeLoss: 0.12065294710111606
iteration: 38 HingeLoss: 0.09758325738771241

```

# Output\_hinge\_train.txt

```

iteration: 39 HingeLoss: 0.0789246541521773
iteration: 40 HingeLoss: 0.0638337067217553
iteration: 41 HingeLoss: 0.05162825428392023
iteration: 42 HingeLoss: 0.04175656995799526
iteration: 43 HingeLoss: 0.03377242091255455
iteration: 44 HingeLoss: 0.027314897163299275
iteration: 45 HingeLoss: 0.02209209724625509
iteration: 46 HingeLoss: 0.017867933304678823
iteration: 47 HingeLoss: 0.014451459135893933
iteration: 48 HingeLoss: 0.011688238790421565
iteration: 49 HingeLoss: 0.00945336555549584
iteration: 50 HingeLoss: 0.007645815757894173
iteration: 51 HingeLoss: 0.006183882159267314
iteration: 52 HingeLoss: 0.005001480518311212
iteration: 53 HingeLoss: 0.06764381171259716
iteration: 54 HingeLoss: 4120.903182416451
iteration: 55 HingeLoss: 3379.5089294437635
iteration: 56 HingeLoss: 219.52121962723788
iteration: 57 HingeLoss: 177.54722277108087
iteration: 58 HingeLoss: 143.59894850826763
iteration: 59 HingeLoss: 116.14182238866772
iteration: 60 HingeLoss: 93.93469136011262
iteration: 61 HingeLoss: 75.97371953912601
iteration: 62 HingeLoss: 61.44701150378972
iteration: 63 HingeLoss: 49.69791193127491
iteration: 64 HingeLoss: 40.195322602083415
iteration: 65 HingeLoss: 32.509695001266614
iteration: 66 HingeLoss: 26.293613302673158
iteration: 67 HingeLoss: 21.266090022793975
iteration: 68 HingeLoss: 17.19986445573837
iteration: 69 HingeLoss: 13.911129736528071
iteration: 70 HingeLoss: 11.251224161941094
iteration: 71 HingeLoss: 9.099911189085162
iteration: 72 HingeLoss: 7.35994434537611
iteration: 73 HingeLoss: 5.95267136584873
iteration: 74 HingeLoss: 4.814478850245251
iteration: 75 HingeLoss: 3.893916726604633
iteration: 76 HingeLoss: 3.149372537581916
iteration: 77 HingeLoss: 2.547190419535191
iteration: 78 HingeLoss: 2.0601497460041616
iteration: 79 HingeLoss: 1.666234665225966
iteration: 80 HingeLoss: 1.3476389107081352
iteration: 81 HingeLoss: 1.0899608989999703
iteration: 82 HingeLoss: 0.8815527304154234
iteration: 83 HingeLoss: 0.7129936653836878
iteration: 84 HingeLoss: 0.5766642758144552
iteration: 85 HingeLoss: 0.46640202170892703
iteration: 86 HingeLoss: 0.37722268393848996
iteration: 87 HingeLoss: 0.3050950610299087
iteration: 88 HingeLoss: 0.24675874550540522
iteration: 89 HingeLoss: 0.1995767426645829
iteration: 90 HingeLoss: 0.16141626968894057

```

# Output\_hinge\_train.txt

```

iteration: 91 HingeLoss: 0.13055234679364566
iteration: 92 HingeLoss: 0.10558982242727473
iteration: 93 HingeLoss: 0.08540030780025833
iteration: 94 HingeLoss: 0.0690711699738115
iteration: 95 HingeLoss: 0.05586427782800947
iteration: 96 HingeLoss: 0.04518263609011253
iteration: 97 HingeLoss: 0.03654339917069467
iteration: 98 HingeLoss: 0.029556044943578743
iteration: 99 HingeLoss: 0.023904721852130884
[-1.88140257e-03 -9.19547098e-04 -1.68123073e-03 ... 8.99138205e-04
-1.21679118e-04 8.25151353e-05]

```

## CROSS VALIDATION 18

```

iteration: 0 HingeLoss: 313.5325772913058
iteration: 1 HingeLoss: 253.027520566531
iteration: 2 HingeLoss: 300.29138676280917
iteration: 3 HingeLoss: 191.75722253364358
iteration: 4 HingeLoss: 155.09189665107073
iteration: 5 HingeLoss: 125.43723823808635
iteration: 6 HingeLoss: 101.45275850354881
iteration: 7 HingeLoss: 82.05427951501446
iteration: 8 HingeLoss: 66.3649257648584
iteration: 9 HingeLoss: 53.675486492685096
iteration: 10 HingeLoss: 43.412357009702205
iteration: 11 HingeLoss: 35.1116098667253
iteration: 12 HingeLoss: 28.398023796717553
iteration: 13 HingeLoss: 22.968122470601777
iteration: 14 HingeLoss: 18.576456361922567
iteration: 15 HingeLoss: 15.024507615200463
iteration: 16 HingeLoss: 12.151716381275119
iteration: 17 HingeLoss: 9.828222980269686
iteration: 18 HingeLoss: 7.948997813901013
iteration: 19 HingeLoss: 6.429093679727368
iteration: 20 HingeLoss: 5.199805876210938
iteration: 21 HingeLoss: 4.20556652262444
iteration: 22 HingeLoss: 3.4014327067739845
iteration: 23 HingeLoss: 2.751054916494771
iteration: 24 HingeLoss: 2.2250339212937273
iteration: 25 HingeLoss: 1.799591829746432
iteration: 26 HingeLoss: 1.455497250040616
iteration: 27 HingeLoss: 1.1771959673623857
iteration: 28 HingeLoss: 0.9521078418633846
iteration: 29 HingeLoss: 0.7700581446680186
iteration: 30 HingeLoss: 0.6228176264245474
iteration: 31 HingeLoss: 0.5037305279750475
iteration: 32 HingeLoss: 0.407413717994317
iteration: 33 HingeLoss: 0.3295133576223814
iteration: 34 HingeLoss: 0.26650809252596125
iteration: 35 HingeLoss: 0.21554987601814324
iteration: 36 HingeLoss: 0.1743352279139926
iteration: 37 HingeLoss: 0.14100110959593198
iteration: 38 HingeLoss: 0.1140407084969216
iteration: 39 HingeLoss: 0.09223532518112228

```

# Output\_hinge\_train.txt

```

iteration: 40 HingeLoss: 0.07459928409246082
iteration: 41 HingeLoss: 0.06033537775445143
iteration: 42 HingeLoss: 0.048798830351513445
iteration: 43 HingeLoss: 0.03946815172629131
iteration: 44 HingeLoss: 0.03192156429710904
iteration: 45 HingeLoss: 0.025817937314142805
iteration: 46 HingeLoss: 0.02088136661953545
iteration: 47 HingeLoss: 0.016888702865530455
iteration: 48 HingeLoss: 0.013659464424772512
iteration: 49 HingeLoss: 0.011047679022906747
iteration: 50 HingeLoss: 0.008935285308245638
iteration: 51 HingeLoss: 0.0072267960875952225
iteration: 52 HingeLoss: 0.005844981988822004
iteration: 53 HingeLoss: 0.004727380437410674
iteration: 54 HingeLoss: 0.003823472141189123
iteration: 55 HingeLoss: 10880.493770927336
iteration: 56 HingeLoss: 5276.290148605067
iteration: 57 HingeLoss: 1493.237106852461
iteration: 58 HingeLoss: 496.27673088462086
iteration: 59 HingeLoss: 491.47848649654577
iteration: 60 HingeLoss: 156.77110346180052
iteration: 61 HingeLoss: 126.7953689290948
iteration: 62 HingeLoss: 102.55120508086917
iteration: 63 HingeLoss: 82.94269540253913
iteration: 64 HingeLoss: 67.08347030357567
iteration: 65 HingeLoss: 54.256640275919416
iteration: 66 HingeLoss: 43.88239011352414
iteration: 67 HingeLoss: 35.491769344409335
iteration: 68 HingeLoss: 28.70549411593097
iteration: 69 HingeLoss: 23.216802308266566
iteration: 70 HingeLoss: 18.77758687045164
iteration: 71 HingeLoss: 15.187180559822899
iteration: 72 HingeLoss: 12.283285117940984
iteration: 73 HingeLoss: 9.934634851696924
iteration: 74 HingeLoss: 8.035062989166809
iteration: 75 HingeLoss: 6.498702589844102
iteration: 76 HingeLoss: 5.256105074494982
iteration: 77 HingeLoss: 4.251100919328976
iteration: 78 HingeLoss: 3.4382606074624675
iteration: 79 HingeLoss: 2.7808410642705206
iteration: 80 HingeLoss: 2.2491247487026373
iteration: 81 HingeLoss: 1.819076321988105
iteration: 82 HingeLoss: 1.471256170706636
iteration: 83 HingeLoss: 1.1899416718681857
iteration: 84 HingeLoss: 0.9624164782726959
iteration: 85 HingeLoss: 0.7783956974938365
iteration: 86 HingeLoss: 0.6295609806726912
iteration: 87 HingeLoss: 0.5091845055948541
iteration: 88 HingeLoss: 0.4118248568404683
iteration: 89 HingeLoss: 0.33308105578259434
iteration: 90 HingeLoss: 0.26939362177505605
iteration: 91 HingeLoss: 0.2178836718364765

```

Output\_hinge\_train.txt

iteration: 92 HingeLoss: 0.17622278560323762  
iteration: 93 HingeLoss: 0.1425277530161659  
iteration: 94 HingeLoss: 0.11527544698773602  
iteration: 95 HingeLoss: 0.1511455018925214  
iteration: 96 HingeLoss: 2182.4337104563683  
iteration: 97 HingeLoss: 183.60025084531864  
iteration: 98 HingeLoss: 148.4945951603826  
iteration: 99 HingeLoss: 120.10138706413518  
[-0.07510716 -0.05133206 -0.05751111 ... 0.14406741 0.07305849  
-0.00705286]

CROSS VALIDATION 19

iteration: 0 HingeLoss: 2036.7607019419793  
iteration: 1 HingeLoss: 728.2022771423751  
iteration: 2 HingeLoss: 174.55039685107232  
iteration: 3 HingeLoss: 141.17513672310443  
iteration: 4 HingeLoss: 114.18146041679866  
iteration: 5 HingeLoss: 92.34916434672228  
iteration: 6 HingeLoss: 74.69135641116053  
iteration: 7 HingeLoss: 60.409845200045  
iteration: 8 HingeLoss: 48.859059099214704  
iteration: 9 HingeLoss: 39.516864315003666  
iteration: 10 HingeLoss: 31.960962697202447  
iteration: 11 HingeLoss: 25.84980246380846  
iteration: 12 HingeLoss: 20.907138929091357  
iteration: 13 HingeLoss: 16.909547328739155  
iteration: 14 HingeLoss: 13.676323280418178  
iteration: 15 HingeLoss: 11.061314347109432  
iteration: 16 HingeLoss: 8.94631346282623  
iteration: 17 HingeLoss: 7.235715581671468  
iteration: 18 HingeLoss: 5.852196013071914  
iteration: 19 HingeLoss: 4.733215089626753  
iteration: 20 HingeLoss: 3.828191166978792  
iteration: 21 HingeLoss: 3.0962141659381217  
iteration: 22 HingeLoss: 2.504196301388367  
iteration: 23 HingeLoss: 2.0253764047963148  
iteration: 24 HingeLoss: 1.6381102307480238  
iteration: 25 HingeLoss: 1.3248920653596756  
iteration: 26 HingeLoss: 1.071563410022457  
iteration: 27 HingeLoss: 0.8666729703655041  
iteration: 28 HingeLoss: 0.7009590198179909  
iteration: 29 HingeLoss: 0.5669307388887221  
iteration: 30 HingeLoss: 0.4585296053118322  
iteration: 31 HingeLoss: 0.3708555287715539  
iteration: 32 HingeLoss: 0.29994535058842303  
iteration: 33 HingeLoss: 0.2425936958190306  
iteration: 34 HingeLoss: 0.19620807969079343  
iteration: 35 HingeLoss: 0.15869171870264545  
iteration: 36 HingeLoss: 0.12834874906520588  
iteration: 37 HingeLoss: 0.10380756803996083  
iteration: 38 HingeLoss: 0.08395883295205696  
iteration: 39 HingeLoss: 0.06790531522670727  
iteration: 40 HingeLoss: 0.054921342685546604



# Output\_hinge\_train.txt

```

iteration: 41 HingeLoss: 0.044419996760384745
iteration: 42 HingeLoss: 0.03592658182976022
iteration: 43 HingeLoss: 0.02905716740442368
iteration: 44 HingeLoss: 0.02350123319745659
iteration: 45 HingeLoss: 0.01900763257870593
iteration: 46 HingeLoss: 0.01537323991517959
iteration: 47 HingeLoss: 0.01243376861958266
iteration: 48 HingeLoss: 0.01005634485237347
iteration: 49 HingeLoss: 0.008133501184072437
iteration: 50 HingeLoss: 0.006578318711464465
iteration: 51 HingeLoss: 0.005320498035255234
iteration: 52 HingeLoss: 0.004303181494356776
iteration: 53 HingeLoss: 0.05167512037862967
iteration: 54 HingeLoss: 3833.249913255156
iteration: 55 HingeLoss: 808.9264359132698
iteration: 56 HingeLoss: 466.77905780746397
iteration: 57 HingeLoss: 193.3214279365222
iteration: 58 HingeLoss: 156.3570150099984
iteration: 59 HingeLoss: 126.46045709358339
iteration: 60 HingeLoss: 102.28033073729007
iteration: 61 HingeLoss: 82.72361413329295
iteration: 62 HingeLoss: 66.90627890958709
iteration: 63 HingeLoss: 54.113329119234734
iteration: 64 HingeLoss: 43.76648105514391
iteration: 65 HingeLoss: 35.39802291094671
iteration: 66 HingeLoss: 28.6296726580589
iteration: 67 HingeLoss: 23.15547844493119
iteration: 68 HingeLoss: 18.727988559895234
iteration: 69 HingeLoss: 15.147065794114244
iteration: 70 HingeLoss: 12.250840576790115
iteration: 71 HingeLoss: 9.908393934371482
iteration: 72 HingeLoss: 8.013839519280808
iteration: 73 HingeLoss: 6.481537196256075
iteration: 74 HingeLoss: 5.242221824554484
iteration: 75 HingeLoss: 4.2398722441505265
iteration: 76 HingeLoss: 3.429178933733078
iteration: 77 HingeLoss: 2.7734958702546337
iteration: 78 HingeLoss: 2.2431840072998246
iteration: 79 HingeLoss: 1.8142714920082874
iteration: 80 HingeLoss: 1.4673700579187596
iteration: 81 HingeLoss: 1.1867986111015132
iteration: 82 HingeLoss: 0.9598743927692027
iteration: 83 HingeLoss: 0.7763396765681225
iteration: 84 HingeLoss: 0.6278980853683573
iteration: 85 HingeLoss: 0.5078395675358142
iteration: 86 HingeLoss: 0.4107370803713548
iteration: 87 HingeLoss: 0.3322012698037501
iteration: 88 HingeLoss: 0.2686820570459514
iteration: 89 HingeLoss: 0.2173081632743025
iteration: 90 HingeLoss: 0.1757573183146152
iteration: 91 HingeLoss: 0.1421512863377918
iteration: 92 HingeLoss: 0.11497096337870415

```

Output\_hinge\_train.txt

```
iteration: 93 HingeLoss: 0.09298770880494775
iteration: 94 HingeLoss: 0.0752078066903923
iteration: 95 HingeLoss: 0.060827546563642865
iteration: 96 HingeLoss: 0.049196893032446384
iteration: 97 HingeLoss: 0.039790102030724146
iteration: 98 HingeLoss: 0.03218195544526053
iteration: 99 HingeLoss: 0.02602853984845349
[-2.03911509e-03 -1.13484926e-03 -7.98899106e-04 ... 1.38954491e-03
 4.64671943e-04 8.56497453e-05]
```

Accuracy (Hinge Loss): 0.75

eta = 0.001 lambda = 1

CROSS VALIDATION 0

```
iteration: 0 HingeLoss: 119.86482134951444
iteration: 1 HingeLoss: 21.869274256690257
iteration: 2 HingeLoss: 17.687715633539938
iteration: 3 HingeLoss: 14.305700347475605
iteration: 4 HingeLoss: 11.570350104662184
iteration: 5 HingeLoss: 9.358018013293528
iteration: 6 HingeLoss: 7.5686993345032345
iteration: 7 HingeLoss: 6.121510936902801
iteration: 8 HingeLoss: 4.951035111117951
iteration: 9 HingeLoss: 4.004362472629194
iteration: 10 HingeLoss: 3.238700282329499
iteration: 11 HingeLoss: 2.6194380729660027
iteration: 12 HingeLoss: 2.1185831413731826
iteration: 13 HingeLoss: 1.7134951855641423
iteration: 14 HingeLoss: 1.3858628880849362
iteration: 15 HingeLoss: 1.12087618380952
iteration: 16 HingeLoss: 0.9065567959378042
iteration: 17 HingeLoss: 0.7332167782063264
iteration: 18 HingeLoss: 0.5930205876258727
iteration: 19 HingeLoss: 0.4796308919831822
iteration: 20 HingeLoss: 0.38792210143253125
iteration: 21 HingeLoss: 0.3137486748562216
iteration: 22 HingeLoss: 0.2537577276739821
iteration: 23 HingeLoss: 0.20523747035352904
iteration: 24 HingeLoss: 0.1659946265409223
iteration: 25 HingeLoss: 0.13425528970415165
iteration: 26 HingeLoss: 0.10858473668183555
iteration: 27 HingeLoss: 0.08782257344381543
iteration: 28 HingeLoss: 0.07103028143719364
iteration: 29 HingeLoss: 0.0574487934389064
iteration: 30 HingeLoss: 0.04646418120283504
iteration: 31 HingeLoss: 0.037579903869448206
iteration: 32 HingeLoss: 0.06161696901032866
iteration: 33 HingeLoss: 327.44833492756226
iteration: 34 HingeLoss: 46.544877660159216
iteration: 35 HingeLoss: 21.28986167452334
iteration: 36 HingeLoss: 17.219090800929028
iteration: 37 HingeLoss: 13.926679869669801
iteration: 38 HingeLoss: 11.263801000561635
iteration: 39 HingeLoss: 9.110083247950858
```

Output\_hinge\_train.txt

iteration: 40 HingeLoss: 7.368171435242566  
iteration: 41 HingeLoss: 5.959325378430107  
iteration: 42 HingeLoss: 4.81986056895159  
iteration: 43 HingeLoss: 3.898269422948379  
iteration: 44 HingeLoss: 3.152892967856083  
iteration: 45 HingeLoss: 2.550037718849576  
iteration: 46 HingeLoss: 2.0624526217194354  
iteration: 47 HingeLoss: 1.6680972149527231  
iteration: 48 HingeLoss: 1.3491453278637082  
iteration: 49 HingeLoss: 1.0911792786297883  
iteration: 50 HingeLoss: 0.8825381473146298  
iteration: 51 HingeLoss: 0.7137906636603136  
iteration: 52 HingeLoss: 0.5773088824306565  
iteration: 53 HingeLoss: 0.4669233750190115  
iteration: 54 HingeLoss: 0.37764435083905273  
iteration: 55 HingeLoss: 0.3054361022616245  
iteration: 56 HingeLoss: 0.24703457726164438  
iteration: 57 HingeLoss: 0.1997998334544186  
iteration: 58 HingeLoss: 0.16159670395506032  
iteration: 59 HingeLoss: 0.13069828076256532  
iteration: 60 HingeLoss: 0.10570785279779496  
iteration: 61 HingeLoss: 0.08549576993610147  
iteration: 62 HingeLoss: 0.06914837907973537  
iteration: 63 HingeLoss: 0.05592672401135661  
iteration: 64 HingeLoss: 0.04523314212522276  
iteration: 65 HingeLoss: 0.03658424809765595  
iteration: 66 HingeLoss: 0.029589083269201504  
iteration: 67 HingeLoss: 0.023931443018172557  
iteration: 68 HingeLoss: 0.01935558326432378  
iteration: 69 HingeLoss: 0.015654659989273775  
iteration: 70 HingeLoss: 0.012661379201704511  
iteration: 71 HingeLoss: 0.01024043469479355  
iteration: 72 HingeLoss: 0.008282391757464622  
iteration: 73 HingeLoss: 0.0066987403629452  
iteration: 74 HingeLoss: 0.005417894222367426  
iteration: 75 HingeLoss: 0.004381954847382175  
iteration: 76 HingeLoss: 0.0035440943466972584  
iteration: 77 HingeLoss: 0.00286643865027393  
iteration: 78 HingeLoss: 0.006281006991628226  
iteration: 79 HingeLoss: 629.6257527376371  
iteration: 80 HingeLoss: 479.9274798762664  
iteration: 81 HingeLoss: 121.77939223614678  
iteration: 82 HingeLoss: 16.121270451912196  
iteration: 83 HingeLoss: 13.038770471204831  
iteration: 84 HingeLoss: 10.545666106643454  
iteration: 85 HingeLoss: 8.52926078255691  
iteration: 86 HingeLoss: 6.898406298966183  
iteration: 87 HingeLoss: 5.579382631017443  
iteration: 88 HingeLoss: 4.5125655396615745  
iteration: 89 HingeLoss: 3.64973135854419  
iteration: 90 HingeLoss: 2.951877124545834  
iteration: 91 HingeLoss: 2.3874575146518904

# Output\_hinge\_train.txt

```

iteration: 92 HingeLoss: 1.9309588928586434
iteration: 93 HingeLoss: 1.5617460093121434
iteration: 94 HingeLoss: 1.2631292186606675
iteration: 95 HingeLoss: 1.0216100528004741
iteration: 96 HingeLoss: 0.8262710454039205
iteration: 97 HingeLoss: 0.6682822262774151
iteration: 98 HingeLoss: 0.5405019774594401
iteration: 99 HingeLoss: 0.43715420843213026
[-5.18893712e-04 -1.37074108e-03 -5.75499673e-04 ... 2.68103551e-03
 4.96359482e-05 -1.89249458e-05]

```

## CROSS VALIDATION 1

```

iteration: 0 HingeLoss: 114.16950572377753
iteration: 1 HingeLoss: 18.585503088169578
iteration: 2 HingeLoss: 15.031824543937722
iteration: 3 HingeLoss: 12.157634261918815
iteration: 4 HingeLoss: 9.833009320627863
iteration: 5 HingeLoss: 7.95286897241259
iteration: 6 HingeLoss: 6.43222464558026
iteration: 7 HingeLoss: 5.202338179432996
iteration: 8 HingeLoss: 4.207614631709541
iteration: 9 HingeLoss: 3.40308920303712
iteration: 10 HingeLoss: 2.7523946790541713
iteration: 11 HingeLoss: 2.2261175118550334
iteration: 12 HingeLoss: 1.8004682301923989
iteration: 13 HingeLoss: 1.4562060765744753
iteration: 14 HingeLoss: 1.1940183536002578
iteration: 15 HingeLoss: 151.6589453533964
iteration: 16 HingeLoss: 11.762045922716933
iteration: 17 HingeLoss: 9.513060246432744
iteration: 18 HingeLoss: 7.694096405241263
iteration: 19 HingeLoss: 6.222931208214019
iteration: 20 HingeLoss: 5.033063115219669
iteration: 21 HingeLoss: 4.070706147024065
iteration: 22 HingeLoss: 3.292358580863194
iteration: 23 HingeLoss: 2.6628365284750237
iteration: 24 HingeLoss: 2.153683507803658
iteration: 25 HingeLoss: 1.74188411574848
iteration: 26 HingeLoss: 1.4088236557056248
iteration: 27 HingeLoss: 1.1394466916204176
iteration: 28 HingeLoss: 0.9215764924066574
iteration: 29 HingeLoss: 0.74536460336618
iteration: 30 HingeLoss: 0.6028456634135488
iteration: 31 HingeLoss: 0.487577344369787
iteration: 32 HingeLoss: 0.3943491363885142
iteration: 33 HingeLoss: 0.3189468156511077
iteration: 34 HingeLoss: 0.2579619474905092
iteration: 35 HingeLoss: 0.20863781385385707
iteration: 36 HingeLoss: 0.16874480051488291
iteration: 37 HingeLoss: 0.13647961112530246
iteration: 38 HingeLoss: 0.11038375224646375
iteration: 39 HingeLoss: 0.08927760461467005
iteration: 40 HingeLoss: 0.07220710044297945

```

Output\_hinge\_train.txt

iteration: 41 HingeLoss: 0.05840059639689055  
iteration: 42 HingeLoss: 0.04723399275955991  
iteration: 43 HingeLoss: 0.03820252205727383  
iteration: 44 HingeLoss: 0.03089793189759745  
iteration: 45 HingeLoss: 0.02499003060890314  
iteration: 46 HingeLoss: 0.020211761483054966  
iteration: 47 HingeLoss: 0.016347130927577322  
iteration: 48 HingeLoss: 0.0132214448397975  
iteration: 49 HingeLoss: 0.010693411854731782  
iteration: 50 HingeLoss: 0.008648756507361388  
iteration: 51 HingeLoss: 0.006995053603076819  
iteration: 52 HingeLoss: 1187.43728926611  
iteration: 53 HingeLoss: 415.0315768293241  
iteration: 54 HingeLoss: 154.9545271174473  
iteration: 55 HingeLoss: 17.471510889034548  
iteration: 56 HingeLoss: 14.130835466522209  
iteration: 57 HingeLoss: 11.428920615402824  
iteration: 58 HingeLoss: 9.243630834329366  
iteration: 59 HingeLoss: 7.476183786438263  
iteration: 60 HingeLoss: 6.046685010507286  
iteration: 61 HingeLoss: 4.890516426658399  
iteration: 62 HingeLoss: 3.955415385100261  
iteration: 63 HingeLoss: 3.1991122212379484  
iteration: 64 HingeLoss: 2.5874195268152835  
iteration: 65 HingeLoss: 2.0926867658160453  
iteration: 66 HingeLoss: 1.6925503786438179  
iteration: 67 HingeLoss: 1.3689228751490812  
iteration: 68 HingeLoss: 1.1071752201597431  
iteration: 69 HingeLoss: 0.8954755526327791  
iteration: 70 HingeLoss: 0.7242543463421142  
iteration: 71 HingeLoss: 0.5857718355942105  
iteration: 72 HingeLoss: 0.4737681521807921  
iteration: 73 HingeLoss: 0.3831803586000551  
iteration: 74 HingeLoss: 0.3099135865106376  
iteration: 75 HingeLoss: 0.25065593511836287  
iteration: 76 HingeLoss: 0.202728762289692  
iteration: 77 HingeLoss: 0.16396560105430183  
iteration: 78 HingeLoss: 0.13261422812161794  
iteration: 79 HingeLoss: 0.1072574575838516  
iteration: 80 HingeLoss: 0.08674907941854842  
iteration: 81 HingeLoss: 0.07016204699875925  
iteration: 82 HingeLoss: 0.056746571514665986  
iteration: 83 HingeLoss: 0.04589622903570714  
iteration: 84 HingeLoss: 0.03712054814014054  
iteration: 85 HingeLoss: 0.030022838982097247  
iteration: 86 HingeLoss: 0.024282261596515458  
iteration: 87 HingeLoss: 0.019639322869939354  
iteration: 88 HingeLoss: 0.015884146592221544  
iteration: 89 HingeLoss: 0.01284698635661069  
iteration: 90 HingeLoss: 0.010390552459882471  
iteration: 91 HingeLoss: 0.05126356327737188  
iteration: 92 HingeLoss: 237.51081423136574

Output\_hinge\_train.txt

iteration: 93 HingeLoss: 17.578918028666056  
iteration: 94 HingeLoss: 14.21770560773107  
iteration: 95 HingeLoss: 11.499180576328492  
iteration: 96 HingeLoss: 9.300456597941373  
iteration: 97 HingeLoss: 7.522144065486867  
iteration: 98 HingeLoss: 6.083857361848631  
iteration: 99 HingeLoss: 4.920581163706298  
[ 0.00495713 -0.00468275 -0.00574594 ... 0.00421744 -0.00240316  
0.00133074]

CROSS VALIDATION 2

iteration: 0 HingeLoss: 201.07036033732868  
iteration: 1 HingeLoss: 21.080585053790905  
iteration: 2 HingeLoss: 17.049829337891172  
iteration: 3 HingeLoss: 13.789782385519652  
iteration: 4 HingeLoss: 11.153079275543526  
iteration: 5 HingeLoss: 9.020532293328937  
iteration: 6 HingeLoss: 7.29574325123092  
iteration: 7 HingeLoss: 5.900745971193499  
iteration: 8 HingeLoss: 4.772481955239  
iteration: 9 HingeLoss: 3.8599499324786275  
iteration: 10 HingeLoss: 3.121900432726858  
iteration: 11 HingeLoss: 2.534501455695169  
iteration: 12 HingeLoss: 18.87980103184062  
iteration: 13 HingeLoss: 50.28297373762481  
iteration: 14 HingeLoss: 11.755122474603702  
iteration: 15 HingeLoss: 9.507460610157986  
iteration: 16 HingeLoss: 7.689567458696596  
iteration: 17 HingeLoss: 6.2192682280135205  
iteration: 18 HingeLoss: 5.030100522524676  
iteration: 19 HingeLoss: 4.06831002283119  
iteration: 20 HingeLoss: 3.2904206124217747  
iteration: 21 HingeLoss: 2.661269113191999  
iteration: 22 HingeLoss: 2.152415793316181  
iteration: 23 HingeLoss: 1.7408587971624205  
iteration: 24 HingeLoss: 1.4079943852245322  
iteration: 25 HingeLoss: 1.138775983471592  
iteration: 26 HingeLoss: 0.921034028360056  
iteration: 27 HingeLoss: 0.7449258622499874  
iteration: 28 HingeLoss: 0.6024908126759854  
iteration: 29 HingeLoss: 0.4872903435820746  
iteration: 30 HingeLoss: 0.3941170121643597  
iteration: 31 HingeLoss: 0.3187590752066687  
iteration: 32 HingeLoss: 0.25781010433580853  
iteration: 33 HingeLoss: 0.20851500417532282  
iteration: 34 HingeLoss: 0.16864547290823884  
iteration: 35 HingeLoss: 0.13639927565370608  
iteration: 36 HingeLoss: 0.11031877748048821  
iteration: 37 HingeLoss: 0.08922505347966478  
iteration: 38 HingeLoss: 0.07216459745356685  
iteration: 39 HingeLoss: 0.058366220277158314  
iteration: 40 HingeLoss: 0.047206189595025407  
iteration: 41 HingeLoss: 0.03818003505280234

Output\_hinge\_train.txt

iteration: 42 HingeLoss: 0.030879744566098776  
iteration: 43 HingeLoss: 0.0249753208227481  
iteration: 44 HingeLoss: 926.4882549267516  
iteration: 45 HingeLoss: 220.48169408333007  
iteration: 46 HingeLoss: 127.12302013913191  
iteration: 47 HingeLoss: 21.696776120394993  
iteration: 48 HingeLoss: 17.54820035076037  
iteration: 49 HingeLoss: 14.192861365286563  
iteration: 50 HingeLoss: 11.479086727290282  
iteration: 51 HingeLoss: 9.28420483377218  
iteration: 52 HingeLoss: 7.5089997526123735  
iteration: 53 HingeLoss: 6.073226333786454  
iteration: 54 HingeLoss: 4.91198286277281  
iteration: 55 HingeLoss: 3.972777288069723  
iteration: 56 HingeLoss: 3.2131544065878828  
iteration: 57 HingeLoss: 2.598776747838157  
iteration: 58 HingeLoss: 2.1018724065228183  
iteration: 59 HingeLoss: 1.6999796604218165  
iteration: 60 HingeLoss: 1.3749316261441198  
iteration: 61 HingeLoss: 1.1120350558207504  
iteration: 62 HingeLoss: 0.8994061536298074  
iteration: 63 HingeLoss: 0.727433388860321  
iteration: 64 HingeLoss: 0.5883430228859776  
iteration: 65 HingeLoss: 0.4758477104287497  
iteration: 66 HingeLoss: 0.384862290725535  
iteration: 67 HingeLoss: 0.31127392141710125  
iteration: 68 HingeLoss: 0.25175616444968374  
iteration: 69 HingeLoss: 0.20361862005614847  
iteration: 70 HingeLoss: 0.16468531177458623  
iteration: 71 HingeLoss: 0.13319632510432441  
iteration: 72 HingeLoss: 0.1077282535407913  
iteration: 73 HingeLoss: 0.08712985588648364  
iteration: 74 HingeLoss: 0.082767011607183  
iteration: 75 HingeLoss: 110.86437554980127  
iteration: 76 HingeLoss: 20.326630951737098  
iteration: 77 HingeLoss: 111.4014894540074  
iteration: 78 HingeLoss: 15.404297034004564  
iteration: 79 HingeLoss: 10.200063643172367  
iteration: 80 HingeLoss: 8.249739934065225  
iteration: 81 HingeLoss: 6.672331797190969  
iteration: 82 HingeLoss: 5.396535159608058  
iteration: 83 HingeLoss: 4.3646797872291785  
iteration: 84 HingeLoss: 3.530122399208193  
iteration: 85 HingeLoss: 2.8551382371402956  
iteration: 86 HingeLoss: 2.309215781019109  
iteration: 87 HingeLoss: 1.8676775274631532  
iteration: 88 HingeLoss: 1.5105644848189315  
iteration: 89 HingeLoss: 1.2217339606241526  
iteration: 90 HingeLoss: 0.9881298584358675  
iteration: 91 HingeLoss: 0.7991924990230028  
iteration: 92 HingeLoss: 0.6463812878862482  
iteration: 93 HingeLoss: 0.5227886520960191

# Output\_hinge\_train.txt

```
iteration: 94 HingeLoss: 0.4228277951147469
iteration: 95 HingeLoss: 0.3419801550871491
iteration: 96 HingeLoss: 0.27659115087666497
iteration: 97 HingeLoss: 0.22370498289230362
iteration: 98 HingeLoss: 0.18093102115606377
iteration: 99 HingeLoss: 0.14633574090898013
[-0.00055637 -0.00033262 -0.00117245 ... 0.00070087 -0.00070621
 0.0003623 ]
```

## CROSS VALIDATION 3

```
iteration: 0 HingeLoss: 196.86325261997865
iteration: 1 HingeLoss: 25.76425102127554
iteration: 2 HingeLoss: 20.258250596196753
iteration: 3 HingeLoss: 16.384730996224125
iteration: 4 HingeLoss: 13.251855511602152
iteration: 5 HingeLoss: 10.718007792795024
iteration: 6 HingeLoss: 8.668649529557575
iteration: 7 HingeLoss: 7.011142939904731
iteration: 8 HingeLoss: 5.670563235503739
iteration: 9 HingeLoss: 4.586311773053589
iteration: 10 HingeLoss: 3.709376794875192
iteration: 11 HingeLoss: 3.000117935113126
iteration: 12 HingeLoss: 2.4264743438905048
iteration: 13 HingeLoss: 1.9625154306931758
iteration: 14 HingeLoss: 1.5872687157835532
iteration: 15 HingeLoss: 1.283771804645271
iteration: 16 HingeLoss: 1.0383056315632155
iteration: 17 HingeLoss: 0.8397743124088783
iteration: 18 HingeLoss: 0.6792035739227025
iteration: 19 HingeLoss: 0.549335086835522
iteration: 20 HingeLoss: 0.44429836534242606
iteration: 21 HingeLoss: 0.35934540169842893
iteration: 22 HingeLoss: 0.2906360405406486
iteration: 23 HingeLoss: 0.23506439114541433
iteration: 24 HingeLoss: 0.19011843087931252
iteration: 25 HingeLoss: 0.15376645345509637
iteration: 26 HingeLoss: 0.12436522907748808
iteration: 27 HingeLoss: 0.10058572501324406
iteration: 28 HingeLoss: 0.08135302890919821
iteration: 29 HingeLoss: 0.06579775919325938
iteration: 30 HingeLoss: 0.05321676614753122
iteration: 31 HingeLoss: 0.07288694882700955
iteration: 32 HingeLoss: 342.5216199312833
iteration: 33 HingeLoss: 40.76900096187848
iteration: 34 HingeLoss: 40.90707293650529
iteration: 35 HingeLoss: 15.527294415061245
iteration: 36 HingeLoss: 12.558366818589676
iteration: 37 HingeLoss: 10.15711900183172
iteration: 38 HingeLoss: 8.215006609351196
iteration: 39 HingeLoss: 6.644239727772565
iteration: 40 HingeLoss: 5.373814490892754
iteration: 41 HingeLoss: 4.346303469728965
iteration: 42 HingeLoss: 3.5152597625006203
```



Output\_hinge\_train.txt

iteration: 43 HingeLoss: 2.8431174408137907  
iteration: 44 HingeLoss: 2.299493445260899  
iteration: 45 HingeLoss: 1.8598141704917892  
iteration: 46 HingeLoss: 1.5042046568519862  
iteration: 47 HingeLoss: 1.2165901763706293  
iteration: 48 HingeLoss: 0.983969601808751  
iteration: 49 HingeLoss: 0.7958277126419244  
iteration: 50 HingeLoss: 0.6436598722609481  
iteration: 51 HingeLoss: 0.5205875902255619  
iteration: 52 HingeLoss: 0.4210475917115831  
iteration: 53 HingeLoss: 0.3405403390605434  
iteration: 54 HingeLoss: 0.275426637772833  
iteration: 55 HingeLoss: 0.22276313286150948  
iteration: 56 HingeLoss: 0.18016925945704276  
iteration: 57 HingeLoss: 0.14571963338960597  
iteration: 58 HingeLoss: 0.11785701744677457  
iteration: 59 HingeLoss: 0.09532192909318772  
iteration: 60 HingeLoss: 0.07709570768792078  
iteration: 61 HingeLoss: 0.062354467649208524  
iteration: 62 HingeLoss: 0.0504318560970337  
iteration: 63 HingeLoss: 0.04078893149565997  
iteration: 64 HingeLoss: 0.032989801710976506  
iteration: 65 HingeLoss: 0.0266819202421458  
iteration: 66 HingeLoss: 0.0215801499519579  
iteration: 67 HingeLoss: 0.017453873923713357  
iteration: 68 HingeLoss: 1064.5379437517497  
iteration: 69 HingeLoss: 343.91315418604006  
iteration: 70 HingeLoss: 130.81460269530314  
iteration: 71 HingeLoss: 17.647143291669458  
iteration: 72 HingeLoss: 14.272885721934383  
iteration: 73 HingeLoss: 11.543809865677492  
iteration: 74 HingeLoss: 9.336552454148885  
iteration: 75 HingeLoss: 7.5513381408207705  
iteration: 76 HingeLoss: 6.107469325219212  
iteration: 77 HingeLoss: 4.939678354072394  
iteration: 78 HingeLoss: 3.9951772071840175  
iteration: 79 HingeLoss: 3.2312713040604537  
iteration: 80 HingeLoss: 2.6134295674468726  
iteration: 81 HingeLoss: 2.1137235042513693  
iteration: 82 HingeLoss: 1.7095647451442213  
iteration: 83 HingeLoss: 1.3826839754403675  
iteration: 84 HingeLoss: 1.1183051015586403  
iteration: 85 HingeLoss: 0.90447732264618  
iteration: 86 HingeLoss: 0.7315349147929328  
iteration: 87 HingeLoss: 0.5916603082932628  
iteration: 88 HingeLoss: 0.4785307075996046  
iteration: 89 HingeLoss: 0.3870322800194941  
iteration: 90 HingeLoss: 0.3130289935383278  
iteration: 91 HingeLoss: 0.25317565447172274  
iteration: 92 HingeLoss: 0.20476669363004843  
iteration: 93 HingeLoss: 0.16561386562887384  
iteration: 94 HingeLoss: 0.13394733294904257

Output\_hinge\_train.txt

iteration: 95 HingeLoss: 0.10833566341823012  
iteration: 96 HingeLoss: 0.08762112473514486  
iteration: 97 HingeLoss: 0.0708673511345286  
iteration: 98 HingeLoss: 0.057317016552860714  
iteration: 99 HingeLoss: 0.04635760098164931  
[-9.06589729e-04 -2.74311646e-04 -4.91282172e-05 ... 4.06464764e-04  
3.54195395e-04 -5.03353038e-05]

CROSS VALIDATION 4

iteration: 0 HingeLoss: 196.86325261997865  
iteration: 1 HingeLoss: 25.76425102127554  
iteration: 2 HingeLoss: 20.258250596196753  
iteration: 3 HingeLoss: 16.384730996224125  
iteration: 4 HingeLoss: 13.251855511602152  
iteration: 5 HingeLoss: 10.718007792795024  
iteration: 6 HingeLoss: 8.668649529557575  
iteration: 7 HingeLoss: 7.011142939904731  
iteration: 8 HingeLoss: 5.670563235503739  
iteration: 9 HingeLoss: 4.586311773053589  
iteration: 10 HingeLoss: 3.709376794875192  
iteration: 11 HingeLoss: 3.000117935113126  
iteration: 12 HingeLoss: 2.4264743438905048  
iteration: 13 HingeLoss: 1.9625154306931758  
iteration: 14 HingeLoss: 1.5872687157835532  
iteration: 15 HingeLoss: 1.283771804645271  
iteration: 16 HingeLoss: 1.0383056315632155  
iteration: 17 HingeLoss: 0.8397743124088783  
iteration: 18 HingeLoss: 0.6792035739227025  
iteration: 19 HingeLoss: 0.549335086835522  
iteration: 20 HingeLoss: 0.44429836534242606  
iteration: 21 HingeLoss: 0.35934540169842893  
iteration: 22 HingeLoss: 0.2906360405406486  
iteration: 23 HingeLoss: 0.23506439114541433  
iteration: 24 HingeLoss: 0.19011843087931252  
iteration: 25 HingeLoss: 0.15376645345509637  
iteration: 26 HingeLoss: 0.12436522907748808  
iteration: 27 HingeLoss: 0.10058572501324406  
iteration: 28 HingeLoss: 0.08135302890919821  
iteration: 29 HingeLoss: 0.06579775919325938  
iteration: 30 HingeLoss: 0.05321676614753122  
iteration: 31 HingeLoss: 0.07288694882700955  
iteration: 32 HingeLoss: 342.5216199312833  
iteration: 33 HingeLoss: 40.76900096187848  
iteration: 34 HingeLoss: 40.90707293650529  
iteration: 35 HingeLoss: 15.527294415061245  
iteration: 36 HingeLoss: 12.558366818589676  
iteration: 37 HingeLoss: 10.15711900183172  
iteration: 38 HingeLoss: 8.215006609351196  
iteration: 39 HingeLoss: 6.644239727772565  
iteration: 40 HingeLoss: 5.373814490892754  
iteration: 41 HingeLoss: 4.346303469728965  
iteration: 42 HingeLoss: 3.5152597625006203  
iteration: 43 HingeLoss: 2.8431174408137907

# Output\_hinge\_train.txt

```

iteration: 44 HingeLoss: 2.299493445260899
iteration: 45 HingeLoss: 1.8598141704917892
iteration: 46 HingeLoss: 1.5042046568519862
iteration: 47 HingeLoss: 1.2165901763706293
iteration: 48 HingeLoss: 0.983969601808751
iteration: 49 HingeLoss: 0.7958277126419244
iteration: 50 HingeLoss: 0.6436598722609481
iteration: 51 HingeLoss: 0.5205875902255619
iteration: 52 HingeLoss: 0.4210475917115831
iteration: 53 HingeLoss: 0.3405403390605434
iteration: 54 HingeLoss: 0.275426637772833
iteration: 55 HingeLoss: 0.22276313286150948
iteration: 56 HingeLoss: 0.18016925945704276
iteration: 57 HingeLoss: 0.14571963338960597
iteration: 58 HingeLoss: 0.11785701744677457
iteration: 59 HingeLoss: 0.09532192909318772
iteration: 60 HingeLoss: 0.07709570768792078
iteration: 61 HingeLoss: 0.062354467649208524
iteration: 62 HingeLoss: 0.0504318560970337
iteration: 63 HingeLoss: 0.04078893149565997
iteration: 64 HingeLoss: 0.032989801710976506
iteration: 65 HingeLoss: 0.0266819202421458
iteration: 66 HingeLoss: 0.0215801499519579
iteration: 67 HingeLoss: 0.017453873923713357
iteration: 68 HingeLoss: 1064.5379437517497
iteration: 69 HingeLoss: 343.91315418604006
iteration: 70 HingeLoss: 130.81460269530314
iteration: 71 HingeLoss: 17.647143291669458
iteration: 72 HingeLoss: 14.272885721934383
iteration: 73 HingeLoss: 11.543809865677492
iteration: 74 HingeLoss: 9.336552454148885
iteration: 75 HingeLoss: 7.5513381408207705
iteration: 76 HingeLoss: 6.107469325219212
iteration: 77 HingeLoss: 4.939678354072394
iteration: 78 HingeLoss: 3.9951772071840175
iteration: 79 HingeLoss: 3.2312713040604537
iteration: 80 HingeLoss: 2.6134295674468726
iteration: 81 HingeLoss: 2.1137235042513693
iteration: 82 HingeLoss: 1.7095647451442213
iteration: 83 HingeLoss: 1.3826839754403675
iteration: 84 HingeLoss: 1.1183051015586403
iteration: 85 HingeLoss: 0.90447732264618
iteration: 86 HingeLoss: 0.7315349147929328
iteration: 87 HingeLoss: 0.5916603082932628
iteration: 88 HingeLoss: 0.4785307075996046
iteration: 89 HingeLoss: 0.3870322800194941
iteration: 90 HingeLoss: 0.3130289935383278
iteration: 91 HingeLoss: 0.25317565447172274
iteration: 92 HingeLoss: 0.20476669363004843
iteration: 93 HingeLoss: 0.16561386562887384
iteration: 94 HingeLoss: 0.13394733294904257
iteration: 95 HingeLoss: 0.10833566341823012

```

Output\_hinge\_train.txt

iteration: 96 HingeLoss: 0.08762112473514486  
iteration: 97 HingeLoss: 0.0708673511345286  
iteration: 98 HingeLoss: 0.057317016552860714  
iteration: 99 HingeLoss: 0.04635760098164931  
[-9.06589729e-04 -2.74311646e-04 -4.91282172e-05 ... 4.06464764e-04  
3.54195395e-04 -5.03353038e-05]

CROSS VALIDATION 5

iteration: 0 HingeLoss: 175.57683467459555  
iteration: 1 HingeLoss: 21.441593702702903  
iteration: 2 HingeLoss: 17.341810601112577  
iteration: 3 HingeLoss: 14.02593478333423  
iteration: 4 HingeLoss: 11.344077678585867  
iteration: 5 HingeLoss: 9.1750104620976  
iteration: 6 HingeLoss: 7.420684110662243  
iteration: 7 HingeLoss: 6.001797261999604  
iteration: 8 HingeLoss: 4.854211530496111  
iteration: 9 HingeLoss: 3.926052239717081  
iteration: 10 HingeLoss: 3.175363515197323  
iteration: 11 HingeLoss: 2.5682117399367317  
iteration: 12 HingeLoss: 2.077151642506979  
iteration: 13 HingeLoss: 1.6799856798706667  
iteration: 14 HingeLoss: 1.3587606349068109  
iteration: 15 HingeLoss: 1.0989560715270446  
iteration: 16 HingeLoss: 0.8888279628655744  
iteration: 17 HingeLoss: 0.7188778223628248  
iteration: 18 HingeLoss: 0.5814233407092699  
iteration: 19 HingeLoss: 0.4702511200170381  
iteration: 20 HingeLoss: 0.38033580765353897  
iteration: 21 HingeLoss: 0.3076129336560187  
iteration: 22 HingeLoss: 0.2487951832257142  
iteration: 23 HingeLoss: 0.20122379920973646  
iteration: 24 HingeLoss: 0.16274839747064446  
iteration: 25 HingeLoss: 0.13162976240029794  
iteration: 26 HingeLoss: 0.10646122861322868  
iteration: 27 HingeLoss: 0.08610509501164669  
iteration: 28 HingeLoss: 0.06964119692719242  
iteration: 29 HingeLoss: 0.056325311629886604  
iteration: 30 HingeLoss: 0.045555516995502324  
iteration: 31 HingeLoss: 0.03684498263168649  
iteration: 32 HingeLoss: 0.02979996353160275  
iteration: 33 HingeLoss: 0.02410200149534463  
iteration: 34 HingeLoss: 0.019493529764408775  
iteration: 35 HingeLoss: 0.015766230151022465  
iteration: 36 HingeLoss: 0.047981439215647355  
iteration: 37 HingeLoss: 313.9678021442631  
iteration: 38 HingeLoss: 101.46794475551008  
iteration: 39 HingeLoss: 33.5917778603099  
iteration: 40 HingeLoss: 15.440893687475814  
iteration: 41 HingeLoss: 12.488486516110285  
iteration: 42 HingeLoss: 10.10060030330824  
iteration: 43 HingeLoss: 8.169294682392524  
iteration: 44 HingeLoss: 6.60726824185968

# Output\_hinge\_train.txt

```

iteration: 45 HingeLoss: 5.343912212394578
iteration: 46 HingeLoss: 4.322118716606269
iteration: 47 HingeLoss: 3.495699303800407
iteration: 48 HingeLoss: 2.8272970790089107
iteration: 49 HingeLoss: 2.2866980475929206
iteration: 50 HingeLoss: 1.8494653426014431
iteration: 51 HingeLoss: 1.4958345974381997
iteration: 52 HingeLoss: 1.2098205310221282
iteration: 53 HingeLoss: 0.9784943601313754
iteration: 54 HingeLoss: 0.7913993755751509
iteration: 55 HingeLoss: 0.6400782643005201
iteration: 56 HingeLoss: 0.5176908108276128
iteration: 57 HingeLoss: 0.41870469685176226
iteration: 58 HingeLoss: 0.3386454221303613
iteration: 59 HingeLoss: 0.2738940422501447
iteration: 60 HingeLoss: 0.2215235803519765
iteration: 61 HingeLoss: 0.17916671808122409
iteration: 62 HingeLoss: 0.14490878495640216
iteration: 63 HingeLoss: 0.11720120892107458
iteration: 64 HingeLoss: 0.09479151575726807
iteration: 65 HingeLoss: 0.07666671310200696
iteration: 66 HingeLoss: 0.062007499836975316
iteration: 67 HingeLoss: 0.05015123096403938
iteration: 68 HingeLoss: 0.04056196385632421
iteration: 69 HingeLoss: 0.032806231876172376
iteration: 70 HingeLoss: 0.026533450247266215
iteration: 71 HingeLoss: 0.021460068461428318
iteration: 72 HingeLoss: 0.06292434990739654
iteration: 73 HingeLoss: 265.7565932052707
iteration: 74 HingeLoss: 50.79279408186771
iteration: 75 HingeLoss: 16.07498679402245
iteration: 76 HingeLoss: 13.00133657332486
iteration: 77 HingeLoss: 10.515389832589538
iteration: 78 HingeLoss: 8.504773544451837
iteration: 79 HingeLoss: 6.878601192533768
iteration: 80 HingeLoss: 5.563364399842655
iteration: 81 HingeLoss: 4.499610106635019
iteration: 82 HingeLoss: 3.6392530951782733
iteration: 83 HingeLoss: 2.9434023786272308
iteration: 84 HingeLoss: 2.380603199592536
iteration: 85 HingeLoss: 1.9254151709129805
iteration: 86 HingeLoss: 1.5572622858846823
iteration: 87 HingeLoss: 1.2595028146001794
iteration: 88 HingeLoss: 1.0186770426309848
iteration: 89 HingeLoss: 0.8238988473501905
iteration: 90 HingeLoss: 0.666363609129524
iteration: 91 HingeLoss: 0.5389502133668964
iteration: 92 HingeLoss: 0.43589915251774114
iteration: 93 HingeLoss: 0.3525521772756678
iteration: 94 HingeLoss: 0.2851417282733882
iteration: 95 HingeLoss: 0.2306206299192985
iteration: 96 HingeLoss: 0.18652434796698883

```

Output\_hinge\_train.txt

iteration: 97 HingeLoss: 0.15085958440355032  
iteration: 98 HingeLoss: 0.12201417377660387  
iteration: 99 HingeLoss: 0.09868420797556524  
[ 8.37948569e-06 -7.73221544e-04 -1.63458575e-04 ... 5.34608585e-04  
3.31004935e-04 1.29659918e-04]

CROSS VALIDATION 6

iteration: 0 HingeLoss: 196.58835721872927  
iteration: 1 HingeLoss: 23.83812798635259  
iteration: 2 HingeLoss: 18.754610142423136  
iteration: 3 HingeLoss: 15.168597143346107  
iteration: 4 HingeLoss: 12.2682549810337  
iteration: 5 HingeLoss: 9.922478582383686  
iteration: 6 HingeLoss: 8.025231083807105  
iteration: 7 HingeLoss: 6.490750613747544  
iteration: 8 HingeLoss: 5.249673572001127  
iteration: 9 HingeLoss: 4.245899165220795  
iteration: 10 HingeLoss: 3.4340534652234904  
iteration: 11 HingeLoss: 2.777438357135412  
iteration: 12 HingeLoss: 2.2463726630374428  
iteration: 13 HingeLoss: 1.8168504544044926  
iteration: 14 HingeLoss: 1.4694559046166535  
iteration: 15 HingeLoss: 1.1884856292811954  
iteration: 16 HingeLoss: 0.9612388412406331  
iteration: 17 HingeLoss: 0.7774432329219372  
iteration: 18 HingeLoss: 0.6287906340072722  
iteration: 19 HingeLoss: 0.50856145461487  
iteration: 20 HingeLoss: 0.41132093757777094  
iteration: 21 HingeLoss: 0.3326734894172801  
iteration: 22 HingeLoss: 351.8883436713947  
iteration: 23 HingeLoss: 332.0344539245399  
iteration: 24 HingeLoss: 26.326632066507273  
iteration: 25 HingeLoss: 15.125918703403903  
iteration: 26 HingeLoss: 104.14599699250293  
iteration: 27 HingeLoss: 11.928411042519167  
iteration: 28 HingeLoss: 9.6476151884881  
iteration: 29 HingeLoss: 7.802923498643068  
iteration: 30 HingeLoss: 6.310949798073126  
iteration: 31 HingeLoss: 5.104251933358739  
iteration: 32 HingeLoss: 4.128283163835516  
iteration: 33 HingeLoss: 3.338926468230417  
iteration: 34 HingeLoss: 2.700500309162863  
iteration: 35 HingeLoss: 2.184145709460245  
iteration: 36 HingeLoss: 1.7665217307945498  
iteration: 37 HingeLoss: 1.4287503859532094  
iteration: 38 HingeLoss: 1.1555632912838798  
iteration: 39 HingeLoss: 0.9346114851769235  
iteration: 40 HingeLoss: 0.7559072140948001  
iteration: 41 HingeLoss: 0.6113724530277898  
iteration: 42 HingeLoss: 0.49447375200515153  
iteration: 43 HingeLoss: 0.3999269025144288  
iteration: 44 HingeLoss: 0.3234580737727795  
iteration: 45 HingeLoss: 0.2616106214185533

Output\_hinge\_train.txt

iteration: 46 HingeLoss: 0.2115888357360309  
iteration: 47 HingeLoss: 0.17113156631550291  
iteration: 48 HingeLoss: 0.13841001056470353  
iteration: 49 HingeLoss: 0.11194504577374326  
iteration: 50 HingeLoss: 0.09054036786903641  
iteration: 51 HingeLoss: 0.0732284145064254  
iteration: 52 HingeLoss: 0.05922662804818052  
iteration: 53 HingeLoss: 0.047902081365556994  
iteration: 54 HingeLoss: 0.038742867436008556  
iteration: 55 HingeLoss: 0.03133495945007938  
iteration: 56 HingeLoss: 0.07280942097212453  
iteration: 57 HingeLoss: 540.799513369424  
iteration: 58 HingeLoss: 56.61699793177824  
iteration: 59 HingeLoss: 20.027521381153743  
iteration: 60 HingeLoss: 16.198118825370667  
iteration: 61 HingeLoss: 13.100924896663997  
iteration: 62 HingeLoss: 10.595936170020222  
iteration: 63 HingeLoss: 8.569918857235196  
iteration: 64 HingeLoss: 6.93129026460106  
iteration: 65 HingeLoss: 5.605978951783547  
iteration: 66 HingeLoss: 4.5340764573576795  
iteration: 67 HingeLoss: 3.6671292379049474  
iteration: 68 HingeLoss: 2.9659484073487175  
iteration: 69 HingeLoss: 2.3988382694906276  
iteration: 70 HingeLoss: 1.9401635675506277  
iteration: 71 HingeLoss: 1.569190685643881  
iteration: 72 HingeLoss: 1.269150420662798  
iteration: 73 HingeLoss: 1.0264799587486884  
iteration: 74 HingeLoss: 0.8302097911786119  
iteration: 75 HingeLoss: 0.6714678562346699  
iteration: 76 HingeLoss: 0.5430784926257071  
iteration: 77 HingeLoss: 0.4392380758276151  
iteration: 78 HingeLoss: 0.355252675030374  
iteration: 79 HingeLoss: 0.2873258719168218  
iteration: 80 HingeLoss: 0.23238714997910512  
iteration: 81 HingeLoss: 0.18795309700145887  
iteration: 82 HingeLoss: 0.15201514660176396  
iteration: 83 HingeLoss: 0.1229487843777133  
iteration: 84 HingeLoss: 0.09944011447463241  
iteration: 85 HingeLoss: 0.08042646714057664  
iteration: 86 HingeLoss: 0.06504836253345597  
iteration: 87 HingeLoss: 0.05261065938515104  
iteration: 88 HingeLoss: 0.042551132313542704  
iteration: 89 HingeLoss: 0.034415057372872385  
iteration: 90 HingeLoss: 0.027834657025123166  
iteration: 91 HingeLoss: 0.12357449925235284  
iteration: 92 HingeLoss: 273.10111126424545  
iteration: 93 HingeLoss: 34.33142813359259  
iteration: 94 HingeLoss: 19.049011827940916  
iteration: 95 HingeLoss: 15.406707161737797  
iteration: 96 HingeLoss: 12.460836693868583  
iteration: 97 HingeLoss: 10.078237321007641

Output\_hinge\_train.txt

iteration: 98 HingeLoss: 8.151207659155812  
iteration: 99 HingeLoss: 6.592639584323393  
[-0.01054124 -0.00159514 -0.00903111 ... 0.00989049 0.00495315  
0.00046974]

CROSS VALIDATION 7

iteration: 0 HingeLoss: 196.58835721872927  
iteration: 1 HingeLoss: 25.71281417734975  
iteration: 2 HingeLoss: 20.267314079299243  
iteration: 3 HingeLoss: 16.392061477788562  
iteration: 4 HingeLoss: 13.25778435367743  
iteration: 5 HingeLoss: 10.722802998682193  
iteration: 6 HingeLoss: 8.672527858446816  
iteration: 7 HingeLoss: 7.014279705108776  
iteration: 8 HingeLoss: 5.673100229200334  
iteration: 9 HingeLoss: 4.588363675761597  
iteration: 10 HingeLoss: 3.7110363593939293  
iteration: 11 HingeLoss: 3.0014601792561377  
iteration: 12 HingeLoss: 2.4275599415392297  
iteration: 13 HingeLoss: 1.963393454457371  
iteration: 14 HingeLoss: 1.5879788552458092  
iteration: 15 HingeLoss: 1.2843461604616142  
iteration: 16 HingeLoss: 1.0387701665190952  
iteration: 17 HingeLoss: 0.8401500250230693  
iteration: 18 HingeLoss: 0.6795074476499119  
iteration: 19 HingeLoss: 0.5495808577747994  
iteration: 20 HingeLoss: 0.44449714315434175  
iteration: 21 HingeLoss: 0.3595061717985316  
iteration: 22 HingeLoss: 0.2907660702700129  
iteration: 23 HingeLoss: 0.23516955827853028  
iteration: 24 HingeLoss: 0.19020348931896233  
iteration: 25 HingeLoss: 0.1538352481245078  
iteration: 26 HingeLoss: 0.12442086972360067  
iteration: 27 HingeLoss: 0.10063072677757116  
iteration: 28 HingeLoss: 0.08138942602055559  
iteration: 29 HingeLoss: 0.06582719692164556  
iteration: 30 HingeLoss: 0.05324057517578159  
iteration: 31 HingeLoss: 0.07094179464806857  
iteration: 32 HingeLoss: 342.4301397389158  
iteration: 33 HingeLoss: 40.958266572140296  
iteration: 34 HingeLoss: 40.8110221837606  
iteration: 35 HingeLoss: 15.530844618386151  
iteration: 36 HingeLoss: 12.561238198138673  
iteration: 37 HingeLoss: 10.159441353471856  
iteration: 38 HingeLoss: 8.21688491106939  
iteration: 39 HingeLoss: 6.645758885028324  
iteration: 40 HingeLoss: 5.375043174626249  
iteration: 41 HingeLoss: 4.347297220514957  
iteration: 42 HingeLoss: 3.5160635011664265  
iteration: 43 HingeLoss: 2.8437674990094854  
iteration: 44 HingeLoss: 2.3000192077702426  
iteration: 45 HingeLoss: 1.8602394035217875  
iteration: 46 HingeLoss: 1.504548582344177



Output\_hinge\_train.txt

```

iteration: 47 HingeLoss: 1.2168683408965104
iteration: 48 HingeLoss: 0.9841945793263129
iteration: 49 HingeLoss: 0.7960096728801952
iteration: 50 HingeLoss: 0.6438070404254412
iteration: 51 HingeLoss: 0.5207066188048055
iteration: 52 HingeLoss: 0.4211438611916407
iteration: 53 HingeLoss: 0.3406182011408053
iteration: 54 HingeLoss: 0.27548961207724487
iteration: 55 HingeLoss: 0.22281406603723275
iteration: 56 HingeLoss: 0.1802104538523362
iteration: 57 HingeLoss: 0.1457529511275926
iteration: 58 HingeLoss: 0.11788396459957648
iteration: 59 HingeLoss: 0.09534372376137369
iteration: 60 HingeLoss: 0.07711333506268758
iteration: 61 HingeLoss: 0.0623687245462862
iteration: 62 HingeLoss: 0.05044338697539603
iteration: 63 HingeLoss: 0.040798257589204925
iteration: 64 HingeLoss: 0.03299734459002493
iteration: 65 HingeLoss: 0.026688020869816413
iteration: 66 HingeLoss: 0.02158508409682971
iteration: 67 HingeLoss: 0.0174578646254789
iteration: 68 HingeLoss: 1064.545205825028
iteration: 69 HingeLoss: 343.83916166809286
iteration: 70 HingeLoss: 130.75447313945045
iteration: 71 HingeLoss: 17.65221351581363
iteration: 72 HingeLoss: 14.276986483660982
iteration: 73 HingeLoss: 11.547126533000315
iteration: 74 HingeLoss: 9.339234951417362
iteration: 75 HingeLoss: 7.553507725797191
iteration: 76 HingeLoss: 6.109224070331254
iteration: 77 HingeLoss: 4.941097579611696
iteration: 78 HingeLoss: 3.996325066846134
iteration: 79 HingeLoss: 3.2321996849043906
iteration: 80 HingeLoss: 2.6141804353620337
iteration: 81 HingeLoss: 2.1143308009547637
iteration: 82 HingeLoss: 1.7100559224585095
iteration: 83 HingeLoss: 1.3830812362071765
iteration: 84 HingeLoss: 1.1186264032805537
iteration: 85 HingeLoss: 0.9047371892253393
iteration: 86 HingeLoss: 0.7317450930595217
iteration: 87 HingeLoss: 0.591830299001145
iteration: 88 HingeLoss: 0.4786681948918703
iteration: 89 HingeLoss: 0.3871434787771793
iteration: 90 HingeLoss: 0.3131189303136252
iteration: 91 HingeLoss: 0.25324839470479066
iteration: 92 HingeLoss: 0.20482552542037308
iteration: 93 HingeLoss: 0.165661448368258
iteration: 94 HingeLoss: 0.1339858175349237
iteration: 95 HingeLoss: 0.10836678948137014
iteration: 96 HingeLoss: 0.0876462992767026
iteration: 97 HingeLoss: 0.07088771212717296
iteration: 98 HingeLoss: 0.0573334843809049

```

Output\_hinge\_train.txt

iteration: 99 HingeLoss: 0.046370920045470485  
[-9.06998758e-04 -2.74321496e-04 -4.91678407e-05 ... 4.06866673e-04  
3.54696619e-04 -5.04302484e-05]

CROSS VALIDATION 8

iteration: 0 HingeLoss: 242.17316348862153  
iteration: 1 HingeLoss: 25.364908760468772  
iteration: 2 HingeLoss: 20.883182166539232  
iteration: 3 HingeLoss: 18.041856959110188  
iteration: 4 HingeLoss: 14.592127367743803  
iteration: 5 HingeLoss: 11.802010269732186  
iteration: 6 HingeLoss: 9.545383129999385  
iteration: 7 HingeLoss: 7.720238926765854  
iteration: 8 HingeLoss: 6.244075096266423  
iteration: 9 HingeLoss: 5.050164143578845  
iteration: 10 HingeLoss: 4.084537338818905  
iteration: 11 HingeLoss: 3.30354515177856  
iteration: 12 HingeLoss: 2.6718841485717397  
iteration: 13 HingeLoss: 2.161001159480281  
iteration: 14 HingeLoss: 1.74780258110047  
iteration: 15 HingeLoss: 1.4136104689717741  
iteration: 16 HingeLoss: 1.1433182326166444  
iteration: 17 HingeLoss: 0.9247077676104474  
iteration: 18 HingeLoss: 0.7478971567890738  
iteration: 19 HingeLoss: 0.6048939748593293  
iteration: 20 HingeLoss: 0.48923400430082276  
iteration: 21 HingeLoss: 0.39568903132136424  
iteration: 22 HingeLoss: 0.3200305132751299  
iteration: 23 HingeLoss: 0.25883843452805166  
iteration: 24 HingeLoss: 0.20934671042237443  
iteration: 25 HingeLoss: 0.16931815108748796  
iteration: 26 HingeLoss: 0.13694333304709708  
iteration: 27 HingeLoss: 0.11075880728438899  
iteration: 28 HingeLoss: 0.08958094649880778  
iteration: 29 HingeLoss: 0.07245244123131073  
iteration: 30 HingeLoss: 0.0585990263057379  
iteration: 31 HingeLoss: 0.047394481478101075  
iteration: 32 HingeLoss: 0.03833232420720473  
iteration: 33 HingeLoss: 0.03100291496606383  
iteration: 34 HingeLoss: 0.025074940178355425  
iteration: 35 HingeLoss: 0.02028043574729485  
iteration: 36 HingeLoss: 0.016402674190831513  
iteration: 37 HingeLoss: 203.42319937170055  
iteration: 38 HingeLoss: 19.778303932207024  
iteration: 39 HingeLoss: 15.996553500607442  
iteration: 40 HingeLoss: 12.93790027572106  
iteration: 41 HingeLoss: 10.464083000012897  
iteration: 42 HingeLoss: 8.463276938116323  
iteration: 43 HingeLoss: 6.845039028375759  
iteration: 44 HingeLoss: 5.536219556867751  
iteration: 45 HingeLoss: 4.477655548023621  
iteration: 46 HingeLoss: 3.6214964021568066  
iteration: 47 HingeLoss: 2.929040889852188

# Output\_hinge\_train.txt

```

iteration: 48 HingeLoss: 2.4270799525175146
iteration: 49 HingeLoss: 10.538250442094448
iteration: 50 HingeLoss: 8.523263045081174
iteration: 51 HingeLoss: 6.89355537096234
iteration: 52 HingeLoss: 5.5827765930300774
iteration: 53 HingeLoss: 139.89437247791133
iteration: 54 HingeLoss: 101.58108513069128
iteration: 55 HingeLoss: 11.233064428055988
iteration: 56 HingeLoss: 9.085223723686433
iteration: 57 HingeLoss: 7.348065226375592
iteration: 58 HingeLoss: 5.943063617718092
iteration: 59 HingeLoss: 4.806708170943379
iteration: 60 HingeLoss: 3.8876318556867577
iteration: 61 HingeLoss: 3.1442893780639496
iteration: 62 HingeLoss: 2.543079195768989
iteration: 63 HingeLoss: 2.056824617057086
iteration: 64 HingeLoss: 1.663545324255142
iteration: 65 HingeLoss: 1.3454637905932538
iteration: 66 HingeLoss: 1.0882016771067682
iteration: 67 HingeLoss: 0.8801298840869163
iteration: 68 HingeLoss: 0.7118428772526566
iteration: 69 HingeLoss: 0.575733526445399
iteration: 70 HingeLoss: 0.4656492381472631
iteration: 71 HingeLoss: 0.37661383787363945
iteration: 72 HingeLoss: 0.304602630602942
iteration: 73 HingeLoss: 0.24636047122985041
iteration: 74 HingeLoss: 0.1992546212239041
iteration: 75 HingeLoss: 0.16115574012699369
iteration: 76 HingeLoss: 290.64862175750466
iteration: 77 HingeLoss: 37.19709707204605
iteration: 78 HingeLoss: 26.25175595386365
iteration: 79 HingeLoss: 16.45671155711755
iteration: 80 HingeLoss: 13.31007288440026
iteration: 81 HingeLoss: 10.76509359559297
iteration: 82 HingeLoss: 8.706732196613254
iteration: 83 HingeLoss: 7.04194393391767
iteration: 84 HingeLoss: 5.695474863431427
iteration: 85 HingeLoss: 4.606460122997975
iteration: 86 HingeLoss: 3.7256726389950443
iteration: 87 HingeLoss: 3.01329789954255
iteration: 88 HingeLoss: 2.4371342066802577
iteration: 89 HingeLoss: 1.971137052952086
iteration: 90 HingeLoss: 1.5942418233967952
iteration: 91 HingeLoss: 1.2894116051753395
iteration: 92 HingeLoss: 1.0428670626758743
iteration: 93 HingeLoss: 0.8434635659001329
iteration: 94 HingeLoss: 0.6821874162709867
iteration: 95 HingeLoss: 0.5517483975989377
iteration: 96 HingeLoss: 0.4462502341615573
iteration: 97 HingeLoss: 0.3609240595094535
iteration: 98 HingeLoss: 0.2919128479059194
iteration: 99 HingeLoss: 0.2360970639872583

```

Output\_hinge\_train.txt

[-1.52640348e-03 -1.34770362e-03 -1.28187569e-05 ... 1.02186104e-03  
6.37220728e-04 -4.53130556e-05]

CROSS VALIDATION 9

iteration: 0 HingeLoss: 176.05714497208453  
iteration: 1 HingeLoss: 25.53512218766512  
iteration: 2 HingeLoss: 20.271074512449815  
iteration: 3 HingeLoss: 16.395102889746063  
iteration: 4 HingeLoss: 13.260244226336997  
iteration: 5 HingeLoss: 10.724792526436355  
iteration: 6 HingeLoss: 8.674136974540364  
iteration: 7 HingeLoss: 7.015581146919333  
iteration: 8 HingeLoss: 5.674152826208742  
iteration: 9 HingeLoss: 4.589215008839364  
iteration: 10 HingeLoss: 3.7117249116162023  
iteration: 11 HingeLoss: 3.00201707546419  
iteration: 12 HingeLoss: 2.428010355286381  
iteration: 13 HingeLoss: 1.963757745936984  
iteration: 14 HingeLoss: 1.5882734916394772  
iteration: 15 HingeLoss: 1.2845844603103116  
iteration: 16 HingeLoss: 1.03896290176535  
iteration: 17 HingeLoss: 0.8403059079384463  
iteration: 18 HingeLoss: 0.6796335246585472  
iteration: 19 HingeLoss: 0.5496828279751131  
iteration: 20 HingeLoss: 0.4445796159371638  
iteration: 21 HingeLoss: 0.3595728752068359  
iteration: 22 HingeLoss: 0.2908200195188095  
iteration: 23 HingeLoss: 0.2352131920525712  
iteration: 24 HingeLoss: 0.19023878000937097  
iteration: 25 HingeLoss: 0.1538637909873908  
iteration: 26 HingeLoss: 0.12444395499090836  
iteration: 27 HingeLoss: 0.10064939797985573  
iteration: 28 HingeLoss: 0.08140452715800853  
iteration: 29 HingeLoss: 0.06583941061570213  
iteration: 30 HingeLoss: 0.05325045352587094  
iteration: 31 HingeLoss: 0.04306859332721109  
iteration: 32 HingeLoss: 0.03483357621139349  
iteration: 33 HingeLoss: 0.02817315212633926  
iteration: 34 HingeLoss: 0.022786247840789867  
iteration: 35 HingeLoss: 0.018429357436950972  
iteration: 36 HingeLoss: 0.01490553503639616  
iteration: 37 HingeLoss: 0.012055492193980204  
iteration: 38 HingeLoss: 691.9878338453475  
iteration: 39 HingeLoss: 106.22748785528384  
iteration: 40 HingeLoss: 148.7313042964895  
iteration: 41 HingeLoss: 150.68224458848596  
iteration: 42 HingeLoss: 15.42872028659882  
iteration: 43 HingeLoss: 12.478640754861967  
iteration: 44 HingeLoss: 10.09263712066615  
iteration: 45 HingeLoss: 8.162854116123249  
iteration: 46 HingeLoss: 6.602059157033507  
iteration: 47 HingeLoss: 5.339699141122303  
iteration: 48 HingeLoss: 4.318711214110614

# Output\_hinge\_train.txt

```

iteration: 49 HingeLoss: 3.4929433396812373
iteration: 50 HingeLoss: 2.8250680745589256
iteration: 51 HingeLoss: 2.284895244427418
iteration: 52 HingeLoss: 1.8480072480455645
iteration: 53 HingeLoss: 1.4946553007880927
iteration: 54 HingeLoss: 1.2088667241627948
iteration: 55 HingeLoss: 0.977722927833294
iteration: 56 HingeLoss: 0.7907754465430834
iteration: 57 HingeLoss: 0.6395736348754559
iteration: 58 HingeLoss: 0.5172826700879575
iteration: 59 HingeLoss: 0.4183745954841194
iteration: 60 HingeLoss: 0.33837843845945503
iteration: 61 HingeLoss: 0.2736781077296682
iteration: 62 HingeLoss: 0.22134893402632227
iteration: 63 HingeLoss: 0.17902546535795796
iteration: 64 HingeLoss: 0.14479454074453357
iteration: 65 HingeLoss: 0.11710880900379372
iteration: 66 HingeLoss: 0.09471678335223976
iteration: 67 HingeLoss: 0.10982118329770539
iteration: 68 HingeLoss: 254.61825338815927
iteration: 69 HingeLoss: 53.81460087275727
iteration: 70 HingeLoss: 18.235674743781303
iteration: 71 HingeLoss: 14.748885832599413
iteration: 72 HingeLoss: 11.928795416645242
iteration: 73 HingeLoss: 9.647926067585368
iteration: 74 HingeLoss: 7.8031749354765205
iteration: 75 HingeLoss: 6.3111531584205105
iteration: 76 HingeLoss: 5.104416409781391
iteration: 77 HingeLoss: 4.128416191212561
iteration: 78 HingeLoss: 3.3390340598399546
iteration: 79 HingeLoss: 2.7005873285020363
iteration: 80 HingeLoss: 2.1842160900914385
iteration: 81 HingeLoss: 1.766578654155427
iteration: 82 HingeLoss: 1.4287964251682421
iteration: 83 HingeLoss: 1.155600527478091
iteration: 84 HingeLoss: 0.9346416015496373
iteration: 85 HingeLoss: 0.7559315720058226
iteration: 86 HingeLoss: 0.6113921535353849
iteration: 87 HingeLoss: 0.4944896856375203
iteration: 88 HingeLoss: 0.39993978952453424
iteration: 89 HingeLoss: 0.32346849669616706
iteration: 90 HingeLoss: 0.26161905140588537
iteration: 91 HingeLoss: 0.2115956538506594
iteration: 92 HingeLoss: 0.17113708075879397
iteration: 93 HingeLoss: 0.13841447060776052
iteration: 94 HingeLoss: 0.11194865302528617
iteration: 95 HingeLoss: 0.09054328538878399
iteration: 96 HingeLoss: 0.12285728089247479
iteration: 97 HingeLoss: 163.9764444069096
iteration: 98 HingeLoss: 105.63774565686343
iteration: 99 HingeLoss: 15.534662235695535
[-0.0134227 -0.00300444 0.00882334 ... -0.00123642 0.00088756

```

0.00193287]

CROSS VALIDATION 10

```
iteration: 0 HingeLoss: 102.23161560501177
iteration: 1 HingeLoss: 21.183678094913063
iteration: 2 HingeLoss: 17.133210266483623
iteration: 3 HingeLoss: 13.857220295753576
iteration: 4 HingeLoss: 11.20762258434916
iteration: 5 HingeLoss: 9.064646538938678
iteration: 6 HingeLoss: 7.331422543674499
iteration: 7 HingeLoss: 5.929603132676801
iteration: 8 HingeLoss: 4.795821425050242
iteration: 9 HingeLoss: 3.8788267319651264
iteration: 10 HingeLoss: 3.13716785575469
iteration: 11 HingeLoss: 2.537319358473722
iteration: 12 HingeLoss: 2.0521661010506413
iteration: 13 HingeLoss: 1.6597775491827211
iteration: 14 HingeLoss: 1.3424164405408523
iteration: 15 HingeLoss: 1.085737001757688
iteration: 16 HingeLoss: 0.8781364719511571
iteration: 17 HingeLoss: 0.710230619498517
iteration: 18 HingeLoss: 0.574429543681798
iteration: 19 HingeLoss: 0.4645945860338508
iteration: 20 HingeLoss: 0.3757608426413612
iteration: 21 HingeLoss: 0.3039127340417568
iteration: 22 HingeLoss: 0.2458024877299148
iteration: 23 HingeLoss: 0.19880332808270385
iteration: 24 HingeLoss: 0.16079073739964095
iteration: 25 HingeLoss: 0.1300464206653772
iteration: 26 HingeLoss: 0.10518063292316242
iteration: 27 HingeLoss: 0.08506935819927862
iteration: 28 HingeLoss: 0.06880350025773152
iteration: 29 HingeLoss: 0.055647788439008194
iteration: 30 HingeLoss: 0.04500754099068723
iteration: 31 HingeLoss: 0.03640178348234997
iteration: 32 HingeLoss: 0.08674316978744352
iteration: 33 HingeLoss: 144.57762976302098
iteration: 34 HingeLoss: 40.54599322876199
iteration: 35 HingeLoss: 64.12919392898266
iteration: 36 HingeLoss: 16.052795873234682
iteration: 37 HingeLoss: 12.983388712232943
iteration: 38 HingeLoss: 10.500873728419904
iteration: 39 HingeLoss: 8.493033021211536
iteration: 40 HingeLoss: 6.869105539681917
iteration: 41 HingeLoss: 5.555684382416059
iteration: 42 HingeLoss: 4.493398562405988
iteration: 43 HingeLoss: 3.634229241771951
iteration: 44 HingeLoss: 2.9393391212281683
iteration: 45 HingeLoss: 2.3773168655067813
iteration: 46 HingeLoss: 1.922757206953895
iteration: 47 HingeLoss: 1.5551125432768256
iteration: 48 HingeLoss: 1.2577641178566688
iteration: 49 HingeLoss: 1.017270796899589
```

# Output\_hinge\_train.txt

```

iteration: 50 HingeLoss: 0.8227614856656713
iteration: 51 HingeLoss: 0.665443718976237
iteration: 52 HingeLoss: 0.5382062126627823
iteration: 53 HingeLoss: 0.43529740996647664
iteration: 54 HingeLoss: 109.75916892744797
iteration: 55 HingeLoss: 26.922538875731544
iteration: 56 HingeLoss: 47.2615100374604
iteration: 57 HingeLoss: 73.47728063934431
iteration: 58 HingeLoss: 10.940951229611947
iteration: 59 HingeLoss: 8.848964617589143
iteration: 60 HingeLoss: 7.156980518422612
iteration: 61 HingeLoss: 5.788515646143027
iteration: 62 HingeLoss: 4.6817108554918185
iteration: 63 HingeLoss: 3.7865349036474494
iteration: 64 HingeLoss: 3.062522872321683
iteration: 65 HingeLoss: 2.476947019413158
iteration: 66 HingeLoss: 2.003337376653981
iteration: 67 HingeLoss: 1.6202852193623845
iteration: 68 HingeLoss: 1.3104753211708575
iteration: 69 HingeLoss: 1.0599032484377497
iteration: 70 HingeLoss: 0.8572423134570635
iteration: 71 HingeLoss: 0.6933315706545622
iteration: 72 HingeLoss: 0.5607617115022402
iteration: 73 HingeLoss: 0.45354013922956254
iteration: 74 HingeLoss: 0.36682008359900165
iteration: 75 HingeLoss: 0.2966815108364018
iteration: 76 HingeLoss: 0.23995392511929925
iteration: 77 HingeLoss: 0.19407305166350008
iteration: 78 HingeLoss: 0.1569649230086892
iteration: 79 HingeLoss: 0.12695212881921963
iteration: 80 HingeLoss: 0.10267799138052999
iteration: 81 HingeLoss: 0.08304523927245942
iteration: 82 HingeLoss: 0.06716640706635177
iteration: 83 HingeLoss: 0.05432371894795633
iteration: 84 HingeLoss: 0.04393664287299564
iteration: 85 HingeLoss: 0.03553564859575547
iteration: 86 HingeLoss: 0.028740983346662325
iteration: 87 HingeLoss: 0.023245505749170066
iteration: 88 HingeLoss: 0.01880080201213608
iteration: 89 HingeLoss: 0.01520595680359246
iteration: 90 HingeLoss: 0.023308887489812025
iteration: 91 HingeLoss: 298.9004501909248
iteration: 92 HingeLoss: 191.43343607324556
iteration: 93 HingeLoss: 19.557673813980585
iteration: 94 HingeLoss: 15.818109408426842
iteration: 95 HingeLoss: 12.79357594552478
iteration: 96 HingeLoss: 10.347354494002598
iteration: 97 HingeLoss: 8.368867741157874
iteration: 98 HingeLoss: 6.768681532036755
iteration: 99 HingeLoss: 5.474462149379928
[-6.94657008e-03 -6.93558552e-04 -5.23906699e-03 ... 6.11509363e-03
-2.76793456e-05 1.11369305e-03]

```

## CROSS VALIDATION 11

iteration: 0 HingeLoss: 196.7883563822199  
iteration: 1 HingeLoss: 25.58047299669986  
iteration: 2 HingeLoss: 20.274780221446683  
iteration: 3 HingeLoss: 16.398100041191878  
iteration: 4 HingeLoss: 13.26266830140515  
iteration: 5 HingeLoss: 10.726753101349656  
iteration: 6 HingeLoss: 8.67572267377929  
iteration: 7 HingeLoss: 7.016863649342104  
iteration: 8 HingeLoss: 5.675190105173153  
iteration: 9 HingeLoss: 4.590053952790578  
iteration: 10 HingeLoss: 3.712403443599815  
iteration: 11 HingeLoss: 3.0025658673734945  
iteration: 12 HingeLoss: 2.4284542143335455  
iteration: 13 HingeLoss: 1.9641167360212222  
iteration: 14 HingeLoss: 1.5885638403017466  
iteration: 15 HingeLoss: 1.2848192922719275  
iteration: 16 HingeLoss: 1.0391528322088555  
iteration: 17 HingeLoss: 0.8404595223490319  
iteration: 18 HingeLoss: 0.6797577669164184  
iteration: 19 HingeLoss: 0.5497833142418772  
iteration: 20 HingeLoss: 0.44466088852493846  
iteration: 21 HingeLoss: 0.359638607905804  
iteration: 22 HingeLoss: 0.29087318366470305  
iteration: 23 HingeLoss: 0.23525619084089078  
iteration: 24 HingeLoss: 0.19027355712778177  
iteration: 25 HingeLoss: 0.15389191847684403  
iteration: 26 HingeLoss: 0.12446670430709944  
iteration: 27 HingeLoss: 0.10066779746723342  
iteration: 28 HingeLoss: 0.08141940853435044  
iteration: 29 HingeLoss: 0.06585144656851347  
iteration: 30 HingeLoss: 0.05326018812008779  
iteration: 31 HingeLoss: 0.07160681530909624  
iteration: 32 HingeLoss: 215.5986151039232  
iteration: 33 HingeLoss: 18.11202494760161  
iteration: 34 HingeLoss: 14.648878744696056  
iteration: 35 HingeLoss: 11.847910385372106  
iteration: 36 HingeLoss: 9.582506821597748  
iteration: 37 HingeLoss: 7.75026430815492  
iteration: 38 HingeLoss: 6.268359414143859  
iteration: 39 HingeLoss: 5.069805129554371  
iteration: 40 HingeLoss: 4.100422830519262  
iteration: 41 HingeLoss: 3.316393226049196  
iteration: 42 HingeLoss: 2.682275580928855  
iteration: 43 HingeLoss: 2.169405677087975  
iteration: 44 HingeLoss: 1.754600095994523  
iteration: 45 HingeLoss: 1.4191082513421227  
iteration: 46 HingeLoss: 1.1477648004377996  
iteration: 47 HingeLoss: 0.9283041204771538  
iteration: 48 HingeLoss: 0.7508058617638043  
iteration: 49 HingeLoss: 0.6072465150420083  
iteration: 50 HingeLoss: 0.4911367223004826



# Output\_hinge\_train.txt

```

iteration: 51 HingeLoss: 0.39722793629433106
iteration: 52 HingeLoss: 0.3212751688237956
iteration: 53 HingeLoss: 0.2598451032061295
iteration: 54 HingeLoss: 0.21016089698869767
iteration: 55 HingeLoss: 0.16997665947184215
iteration: 56 HingeLoss: 0.13747593000976008
iteration: 57 HingeLoss: 0.1111895679722975
iteration: 58 HingeLoss: 0.0899293427219473
iteration: 59 HingeLoss: 0.0727342216530276
iteration: 60 HingeLoss: 0.09772795297113047
iteration: 61 HingeLoss: 147.89977861356923
iteration: 62 HingeLoss: 195.7932163755047
iteration: 63 HingeLoss: 16.22056430348442
iteration: 64 HingeLoss: 13.119078641935786
iteration: 65 HingeLoss: 10.610618791870507
iteration: 66 HingeLoss: 8.581794058807704
iteration: 67 HingeLoss: 6.940894844343397
iteration: 68 HingeLoss: 5.613747068515185
iteration: 69 HingeLoss: 4.540359255686726
iteration: 70 HingeLoss: 3.672210721127604
iteration: 71 HingeLoss: 2.9700582753390297
iteration: 72 HingeLoss: 2.402162301895672
iteration: 73 HingeLoss: 1.9428520216459495
iteration: 74 HingeLoss: 1.5713650884600754
iteration: 75 HingeLoss: 37.61070481938449
iteration: 76 HingeLoss: 6.1480882695657675
iteration: 77 HingeLoss: 4.972530671369418
iteration: 78 HingeLoss: 4.0217479309964395
iteration: 79 HingeLoss: 3.2527615191199506
iteration: 80 HingeLoss: 2.630810702660345
iteration: 81 HingeLoss: 2.1277812445053668
iteration: 82 HingeLoss: 1.7209345468644055
iteration: 83 HingeLoss: 1.3918797913268879
iteration: 84 HingeLoss: 1.1257426129506516
iteration: 85 HingeLoss: 0.9104927296953129
iteration: 86 HingeLoss: 0.7364001338238071
iteration: 87 HingeLoss: 0.5955952633220817
iteration: 88 HingeLoss: 0.48171327162818556
iteration: 89 HingeLoss: 0.38960631548415303
iteration: 90 HingeLoss: 0.31511085536854416
iteration: 91 HingeLoss: 0.25485944971837676
iteration: 92 HingeLoss: 0.2061285354158502
iteration: 93 HingeLoss: 0.16671531371363452
iteration: 94 HingeLoss: 0.1348381764347331
iteration: 95 HingeLoss: 0.10905617138131739
iteration: 96 HingeLoss: 0.12186530439982464
iteration: 97 HingeLoss: 551.2699089236595
iteration: 98 HingeLoss: 18.66885767052325
iteration: 99 HingeLoss: 16.086991513786128
[-0.00691854 -0.01118691 -0.00893299 ... 0.01783243 -0.00385665
0.00237744]

```

CROSS VALIDATION 12

Output\_hinge\_train.txt

iteration: 0 HingeLoss: 137.80947585488093  
iteration: 1 HingeLoss: 59.076044700805284  
iteration: 2 HingeLoss: 42.29648496239575  
iteration: 3 HingeLoss: 15.82680736585629  
iteration: 4 HingeLoss: 12.800610792488559  
iteration: 5 HingeLoss: 10.35304422888635  
iteration: 6 HingeLoss: 8.373469558825569  
iteration: 7 HingeLoss: 6.772403449890467  
iteration: 8 HingeLoss: 5.477472410435463  
iteration: 9 HingeLoss: 4.430141268026044  
iteration: 10 HingeLoss: 3.583067185747285  
iteration: 11 HingeLoss: 2.897959609152468  
iteration: 12 HingeLoss: 2.3438494063648427  
iteration: 13 HingeLoss: 1.8956889607317495  
iteration: 14 HingeLoss: 1.5332199355818317  
iteration: 15 HingeLoss: 1.2400575303018828  
iteration: 16 HingeLoss: 1.0029498330745725  
iteration: 17 HingeLoss: 0.8111787905674281  
iteration: 18 HingeLoss: 0.65607571641872  
iteration: 19 HingeLoss: 0.5306294378989398  
iteration: 20 HingeLoss: 0.441766442330562  
iteration: 21 HingeLoss: 136.65569978641864  
iteration: 22 HingeLoss: 93.53444462452039  
iteration: 23 HingeLoss: 11.75565662814036  
iteration: 24 HingeLoss: 9.507892629792025  
iteration: 25 HingeLoss: 7.689916873146534  
iteration: 26 HingeLoss: 6.2195508319699355  
iteration: 27 HingeLoss: 5.030329090622511  
iteration: 28 HingeLoss: 4.068494887105604  
iteration: 29 HingeLoss: 3.2905701293503316  
iteration: 30 HingeLoss: 2.6613900414351432  
iteration: 31 HingeLoss: 2.152513599231078  
iteration: 32 HingeLoss: 1.7409379019004043  
iteration: 33 HingeLoss: 1.4080583645817937  
iteration: 34 HingeLoss: 1.1388277295270113  
iteration: 35 HingeLoss: 0.9210758802067458  
iteration: 36 HingeLoss: 0.7449597117300523  
iteration: 37 HingeLoss: 0.6025181898980507  
iteration: 38 HingeLoss: 0.48731248608726446  
iteration: 39 HingeLoss: 364.2493434902346  
iteration: 40 HingeLoss: 183.91809216825078  
iteration: 41 HingeLoss: 86.25454535552828  
iteration: 42 HingeLoss: 17.24572565812614  
iteration: 43 HingeLoss: 13.94822195536102  
iteration: 44 HingeLoss: 11.281224088378238  
iteration: 45 HingeLoss: 9.124174919176024  
iteration: 46 HingeLoss: 7.379568680094245  
iteration: 47 HingeLoss: 5.9685433901289  
iteration: 48 HingeLoss: 4.827316032160898  
iteration: 49 HingeLoss: 3.9042993493014295  
iteration: 50 HingeLoss: 3.1577699299981314  
iteration: 51 HingeLoss: 2.5539821716243503

# Output\_hinge\_train.txt

```

iteration: 52 HingeLoss: 2.0656428674583296
iteration: 53 HingeLoss: 1.6706774633308066
iteration: 54 HingeLoss: 1.3512322146547255
iteration: 55 HingeLoss: 1.0928671380294952
iteration: 56 HingeLoss: 0.8839032761589154
iteration: 57 HingeLoss: 99.33619989800526
iteration: 58 HingeLoss: 6.387742257517579
iteration: 59 HingeLoss: 5.166361135955534
iteration: 60 HingeLoss: 4.178516651278382
iteration: 61 HingeLoss: 3.37955496054989
iteration: 62 HingeLoss: 2.7333603487934157
iteration: 63 HingeLoss: 2.2107226790418615
iteration: 64 HingeLoss: 1.7880169973883677
iteration: 65 HingeLoss: 1.4461356068122089
iteration: 66 HingeLoss: 1.1696243359793246
iteration: 67 HingeLoss: 0.9459839595061732
iteration: 68 HingeLoss: 0.7651051915687876
iteration: 69 HingeLoss: 0.618811712696584
iteration: 70 HingeLoss: 0.5004905730482844
iteration: 71 HingeLoss: 0.4047932651737326
iteration: 72 HingeLoss: 0.3273939537602517
iteration: 73 HingeLoss: 239.01313726883262
iteration: 74 HingeLoss: 302.9836941860907
iteration: 75 HingeLoss: 51.85265647449599
iteration: 76 HingeLoss: 16.21632014981104
iteration: 77 HingeLoss: 13.11564600021213
iteration: 78 HingeLoss: 10.607842495320043
iteration: 79 HingeLoss: 8.579548609629896
iteration: 80 HingeLoss: 6.939078740797369
iteration: 81 HingeLoss: 5.612278216704824
iteration: 82 HingeLoss: 4.539171258644641
iteration: 83 HingeLoss: 3.671249877452261
iteration: 84 HingeLoss: 2.9692811517135147
iteration: 85 HingeLoss: 2.4015337697578936
iteration: 86 HingeLoss: 1.9423436692612719
iteration: 87 HingeLoss: 1.5709539366167957
iteration: 88 HingeLoss: 1.2705765256827186
iteration: 89 HingeLoss: 1.0276333824864787
iteration: 90 HingeLoss: 0.831142672207929
iteration: 91 HingeLoss: 0.6722223638682027
iteration: 92 HingeLoss: 0.5436887331077928
iteration: 93 HingeLoss: 0.4397316340494615
iteration: 94 HingeLoss: 0.3556518614585174
iteration: 95 HingeLoss: 0.2876487311001166
iteration: 96 HingeLoss: 334.6752134073489
iteration: 97 HingeLoss: 171.06493353847532
iteration: 98 HingeLoss: 12.497798381657013
iteration: 99 HingeLoss: 10.108131674851482
[-0.02116412 -0.00314782 0.00373234 ... 0.00562225 0.0053829
0.00223058]
CROSS VALIDATION 13
iteration: 0 HingeLoss: 197.4167546119514

```

Output\_hinge\_train.txt

iteration: 1 HingeLoss: 25.66284713381888  
iteration: 2 HingeLoss: 20.27790968754498  
iteration: 3 HingeLoss: 16.40063113142294  
iteration: 4 HingeLoss: 13.264715429431645  
iteration: 5 HingeLoss: 10.728408804139471  
iteration: 6 HingeLoss: 8.677061794583029  
iteration: 7 HingeLoss: 7.017946720855931  
iteration: 8 HingeLoss: 5.676066085817161  
iteration: 9 HingeLoss: 4.590762439791556  
iteration: 10 HingeLoss: 3.7129764629170676  
iteration: 11 HingeLoss: 3.0030293213782806  
iteration: 12 HingeLoss: 2.4288290526820746  
iteration: 13 HingeLoss: 1.964419902648496  
iteration: 14 HingeLoss: 1.5888090393435559  
iteration: 15 HingeLoss: 1.2850176075371817  
iteration: 16 HingeLoss: 1.0393132282044628  
iteration: 17 HingeLoss: 0.8405892495053049  
iteration: 18 HingeLoss: 0.67986268933054  
iteration: 19 HingeLoss: 0.5498681747545208  
iteration: 20 HingeLoss: 0.4447295231123757  
iteration: 21 HingeLoss: 0.3596941190787383  
iteration: 22 HingeLoss: 0.29091808071203173  
iteration: 23 HingeLoss: 0.23529250325787437  
iteration: 24 HingeLoss: 0.19030292635595236  
iteration: 25 HingeLoss: 0.1539156721026006  
iteration: 26 HingeLoss: 0.1244859160730097  
iteration: 27 HingeLoss: 0.1006833358087554  
iteration: 28 HingeLoss: 0.08143197583599159  
iteration: 29 HingeLoss: 0.06586161091393718  
iteration: 30 HingeLoss: 0.05326840897137644  
iteration: 31 HingeLoss: 0.07361309278067378  
iteration: 32 HingeLoss: 342.1892323196282  
iteration: 33 HingeLoss: 41.10502035787013  
iteration: 34 HingeLoss: 40.8639655758446  
iteration: 35 HingeLoss: 15.53855799389857  
iteration: 36 HingeLoss: 12.567476722153556  
iteration: 37 HingeLoss: 10.164487027939746  
iteration: 38 HingeLoss: 8.220965817189999  
iteration: 39 HingeLoss: 6.649059493276284  
iteration: 40 HingeLoss: 5.377712683427611  
iteration: 41 HingeLoss: 4.349456300510274  
iteration: 42 HingeLoss: 3.5178097499234235  
iteration: 43 HingeLoss: 2.8451798527564227  
iteration: 44 HingeLoss: 2.30116150957489  
iteration: 45 HingeLoss: 1.8611632892095864  
iteration: 46 HingeLoss: 1.505295814608581  
iteration: 47 HingeLoss: 1.2174726971110719  
iteration: 48 HingeLoss: 0.9846833783938561  
iteration: 49 HingeLoss: 0.7964050101377183  
iteration: 50 HingeLoss: 0.6441267864265354  
iteration: 51 HingeLoss: 0.5209652271278771  
iteration: 52 HingeLoss: 0.42135302178953093

# Output\_hinge\_train.txt

```

iteration: 53 HingeLoss: 0.3407873687653822
iteration: 54 HingeLoss: 0.27562643366550577
iteration: 55 HingeLoss: 0.22292472637818803
iteration: 56 HingeLoss: 0.18029995515995856
iteration: 57 HingeLoss: 0.1458253391574593
iteration: 58 HingeLoss: 0.11794251153042222
iteration: 59 HingeLoss: 0.09539107610840922
iteration: 60 HingeLoss: 0.07715163330885312
iteration: 61 HingeLoss: 0.062399699899171206
iteration: 62 HingeLoss: 0.05046843962355653
iteration: 63 HingeLoss: 0.04081851999532453
iteration: 64 HingeLoss: 0.03301373268197933
iteration: 65 HingeLoss: 0.02670127544364742
iteration: 66 HingeLoss: 0.02159580430318017
iteration: 67 HingeLoss: 0.017466535053186478
iteration: 68 HingeLoss: 1064.470158835047
iteration: 69 HingeLoss: 322.85634780848505
iteration: 70 HingeLoss: 130.9757330674372
iteration: 71 HingeLoss: 17.659042668397607
iteration: 72 HingeLoss: 14.282509854373043
iteration: 73 HingeLoss: 11.551593796492773
iteration: 74 HingeLoss: 9.342848042797865
iteration: 75 HingeLoss: 7.556429968764478
iteration: 76 HingeLoss: 6.111587559947361
iteration: 77 HingeLoss: 4.943009153436318
iteration: 78 HingeLoss: 3.9978711343482196
iteration: 79 HingeLoss: 3.233450133456369
iteration: 80 HingeLoss: 2.615191789380562
iteration: 81 HingeLoss: 2.115148776991581
iteration: 82 HingeLoss: 1.7107174957400215
iteration: 83 HingeLoss: 1.3836163120371643
iteration: 84 HingeLoss: 1.1190591688589684
iteration: 85 HingeLoss: 0.905087206989858
iteration: 86 HingeLoss: 0.7320281849725332
iteration: 87 HingeLoss: 0.5920592617548575
iteration: 88 HingeLoss: 0.47885337836118885
iteration: 89 HingeLoss: 0.38729325386833674
iteration: 90 HingeLoss: 0.3132400673568706
iteration: 91 HingeLoss: 0.25334636949574446
iteration: 92 HingeLoss: 0.20490476674412733
iteration: 93 HingeLoss: 0.1657255381951329
iteration: 94 HingeLoss: 0.1340376529373912
iteration: 95 HingeLoss: 0.1084087135913261
iteration: 96 HingeLoss: 0.08768020720279047
iteration: 97 HingeLoss: 0.07091513661997166
iteration: 98 HingeLoss: 0.05735566511833236
iteration: 99 HingeLoss: 0.04638885967033203
[-9.06794454e-04 -2.74196748e-04 -4.91046086e-05 ... 4.06917661e-04
 3.54802239e-04 -5.04282138e-05]
CROSS VALIDATION 14
iteration: 0 HingeLoss: 197.4167546119514
iteration: 1 HingeLoss: 23.475583151297354

```

# Output\_hinge\_train.txt

```

iteration: 2 HingeLoss: 18.92620815215016
iteration: 3 HingeLoss: 15.307384410070549
iteration: 4 HingeLoss: 12.380505148943458
iteration: 5 HingeLoss: 10.013265730896286
iteration: 6 HingeLoss: 8.09865909276719
iteration: 7 HingeLoss: 6.550138672389944
iteration: 8 HingeLoss: 5.297706217299057
iteration: 9 HingeLoss: 4.284747631849566
iteration: 10 HingeLoss: 3.4654738325600314
iteration: 11 HingeLoss: 2.8028509298631086
iteration: 12 HingeLoss: 2.2669261736225814
iteration: 13 HingeLoss: 1.8334739896088967
iteration: 14 HingeLoss: 1.482900903296923
iteration: 15 HingeLoss: 1.1993598499141538
iteration: 16 HingeLoss: 0.9700338346196795
iteration: 17 HingeLoss: 0.7845565618811664
iteration: 18 HingeLoss: 0.6345438445785001
iteration: 19 HingeLoss: 0.5132146109733905
iteration: 20 HingeLoss: 0.4150843778045417
iteration: 21 HingeLoss: 0.3357173334769242
iteration: 22 HingeLoss: 0.27152582468407943
iteration: 23 HingeLoss: 0.21960818259459092
iteration: 24 HingeLoss: 0.17761755780914085
iteration: 25 HingeLoss: 0.1436558349937392
iteration: 26 HingeLoss: 0.11618783177913049
iteration: 27 HingeLoss: 0.09397190343242136
iteration: 28 HingeLoss: 0.07600381640221374
iteration: 29 HingeLoss: 0.06147135363556362
iteration: 30 HingeLoss: 0.04971759967672443
iteration: 31 HingeLoss: 0.04021124591251836
iteration: 32 HingeLoss: 0.03252257366306455
iteration: 33 HingeLoss: 0.026304029474007826
iteration: 34 HingeLoss: 208.0436259987207
iteration: 35 HingeLoss: 50.62079446564066
iteration: 36 HingeLoss: 16.06478042078868
iteration: 37 HingeLoss: 12.993081730238178
iteration: 38 HingeLoss: 10.508713373398297
iteration: 39 HingeLoss: 8.499373671084873
iteration: 40 HingeLoss: 6.874233812827841
iteration: 41 HingeLoss: 5.559832093768141
iteration: 42 HingeLoss: 4.496753202256604
iteration: 43 HingeLoss: 3.6369424509545807
iteration: 44 HingeLoss: 2.9415335457853518
iteration: 45 HingeLoss: 2.401351975150398
iteration: 46 HingeLoss: 38.94012674883527
iteration: 47 HingeLoss: 57.63313095003936
iteration: 48 HingeLoss: 7.621668155637133
iteration: 49 HingeLoss: 6.164351747926675
iteration: 50 HingeLoss: 4.985684458600012
iteration: 51 HingeLoss: 4.032386621851379
iteration: 52 HingeLoss: 3.261366017666478
iteration: 53 HingeLoss: 2.637769960735115

```

# Output\_hinge\_train.txt

```

iteration: 54 HingeLoss: 2.1334098436258553
iteration: 55 HingeLoss: 1.7254869183555592
iteration: 56 HingeLoss: 1.3955617174598116
iteration: 57 HingeLoss: 1.1287205289829099
iteration: 58 HingeLoss: 0.9129012472958924
iteration: 59 HingeLoss: 0.7383481259664539
iteration: 60 HingeLoss: 0.5971707857043561
iteration: 61 HingeLoss: 0.48298754308067426
iteration: 62 HingeLoss: 0.390636937297525
iteration: 63 HingeLoss: 0.3159444150626921
iteration: 64 HingeLoss: 0.2555336269526378
iteration: 65 HingeLoss: 0.2066738052344209
iteration: 66 HingeLoss: 0.16715632411851694
iteration: 67 HingeLoss: 0.13519486255707241
iteration: 68 HingeLoss: 0.10934465661536388
iteration: 69 HingeLoss: 0.08843719135617686
iteration: 70 HingeLoss: 0.07152738009394509
iteration: 71 HingeLoss: 0.05785084334596926
iteration: 72 HingeLoss: 0.04678935634779637
iteration: 73 HingeLoss: 0.037842903246001
iteration: 74 HingeLoss: 0.03060707472531065
iteration: 75 HingeLoss: 0.024754787367952384
iteration: 76 HingeLoss: 0.02002149839970751
iteration: 77 HingeLoss: 0.01619324748022054
iteration: 78 HingeLoss: 0.01309698498687289
iteration: 79 HingeLoss: 0.010592749598614653
iteration: 80 HingeLoss: 978.2311781035046
iteration: 81 HingeLoss: 316.5072959127215
iteration: 82 HingeLoss: 22.683009372419036
iteration: 83 HingeLoss: 18.34585888781977
iteration: 84 HingeLoss: 14.838001995495459
iteration: 85 HingeLoss: 12.0008719441585
iteration: 86 HingeLoss: 9.706221057512508
iteration: 87 HingeLoss: 7.850323514464037
iteration: 88 HingeLoss: 6.349286598418025
iteration: 89 HingeLoss: 5.1352584685935785
iteration: 90 HingeLoss: 4.153361032061866
iteration: 91 HingeLoss: 3.3592092721623925
iteration: 92 HingeLoss: 2.716904898724854
iteration: 93 HingeLoss: 2.1974136264405573
iteration: 94 HingeLoss: 1.7772527289905862
iteration: 95 HingeLoss: 1.4374295420297973
iteration: 96 HingeLoss: 1.162582931845332
iteration: 97 HingeLoss: 0.9402889212291353
iteration: 98 HingeLoss: 0.7604990845538031
iteration: 99 HingeLoss: 0.6150863256488737
[-0.00305552 -0.00184363 -0.00174526 ... 0.00210106 -0.00026512
 0.0001224 ]
CROSS VALIDATION 15
iteration: 0 HingeLoss: 197.4167546119514
iteration: 1 HingeLoss: 25.662847133818904
iteration: 2 HingeLoss: 20.283397176289547

```

# Output\_hinge\_train.txt

```

iteration: 3 HingeLoss: 16.40506937383177
iteration: 4 HingeLoss: 13.268305048763253
iteration: 5 HingeLoss: 10.731312063078246
iteration: 6 HingeLoss: 8.679409930050031
iteration: 7 HingeLoss: 7.0198458763524405
iteration: 8 HingeLoss: 5.677602109462564
iteration: 9 HingeLoss: 4.5920047649427
iteration: 10 HingeLoss: 3.713981246785973
iteration: 11 HingeLoss: 3.0038419835241656
iteration: 12 HingeLoss: 2.42948632812587
iteration: 13 HingeLoss: 1.9649515024174824
iteration: 14 HingeLoss: 1.589238993508213
iteration: 15 HingeLoss: 1.285365351449972
iteration: 16 HingeLoss: 1.0395944810421445
iteration: 17 HingeLoss: 0.8408167248277889
iteration: 18 HingeLoss: 0.6800466697759142
iteration: 19 HingeLoss: 0.5500169768483494
iteration: 20 HingeLoss: 0.444849873202206
iteration: 21 HingeLoss: 0.35979145738728935
iteration: 22 HingeLoss: 0.29099680725328314
iteration: 23 HingeLoss: 0.23535617673227138
iteration: 24 HingeLoss: 0.1903544250154559
iteration: 25 HingeLoss: 0.15395732385720895
iteration: 26 HingeLoss: 0.12451960372000269
iteration: 27 HingeLoss: 0.1007105821413671
iteration: 28 HingeLoss: 0.08145401247870952
iteration: 29 HingeLoss: 0.06587943399600821
iteration: 30 HingeLoss: 0.053282824155149136
iteration: 31 HingeLoss: 0.07419578427849151
iteration: 32 HingeLoss: 342.1798903407819
iteration: 33 HingeLoss: 41.10720394989343
iteration: 34 HingeLoss: 40.86334204268031
iteration: 35 HingeLoss: 15.538573624204357
iteration: 36 HingeLoss: 12.567489363835248
iteration: 37 HingeLoss: 10.16449725244323
iteration: 38 HingeLoss: 8.2209740866967
iteration: 39 HingeLoss: 6.649066181595308
iteration: 40 HingeLoss: 5.377718092893124
iteration: 41 HingeLoss: 4.349460675648044
iteration: 42 HingeLoss: 3.517813288504166
iteration: 43 HingeLoss: 2.8451827147357074
iteration: 44 HingeLoss: 2.301163824323664
iteration: 45 HingeLoss: 1.8611651613621585
iteration: 46 HingeLoss: 1.5052973287924503
iteration: 47 HingeLoss: 1.2174739217723667
iteration: 48 HingeLoss: 0.9846843688913213
iteration: 49 HingeLoss: 0.7964058112451206
iteration: 50 HingeLoss: 0.6441274343565835
iteration: 51 HingeLoss: 0.5209657511691556
iteration: 52 HingeLoss: 0.42135344563044164
iteration: 53 HingeLoss: 0.34078771156493803
iteration: 54 HingeLoss: 0.2756267109193824

```



# Output\_hinge\_train.txt

```

iteration: 55 HingeLoss: 0.2229249506191788
iteration: 56 HingeLoss: 0.1803001365244992
iteration: 57 HingeLoss: 0.1458254858438276
iteration: 58 HingeLoss: 0.11794263016932817
iteration: 59 HingeLoss: 0.09539117206272427
iteration: 60 HingeLoss: 0.07715171091603007
iteration: 61 HingeLoss: 0.062399762667311606
iteration: 62 HingeLoss: 0.050468490389988255
iteration: 63 HingeLoss: 0.040818561054858434
iteration: 64 HingeLoss: 0.03301376589064239
iteration: 65 HingeLoss: 0.026701302302581192
iteration: 66 HingeLoss: 0.021595826026497414
iteration: 67 HingeLoss: 0.0174665526228531
iteration: 68 HingeLoss: 1064.467488455305
iteration: 69 HingeLoss: 345.30387107473166
iteration: 70 HingeLoss: 130.97570447104792
iteration: 71 HingeLoss: 17.659042826596508
iteration: 72 HingeLoss: 14.282509982323203
iteration: 73 HingeLoss: 11.551593899977965
iteration: 74 HingeLoss: 9.34284812649596
iteration: 75 HingeLoss: 7.556430036458916
iteration: 76 HingeLoss: 6.111587614698148
iteration: 77 HingeLoss: 4.94300919771837
iteration: 78 HingeLoss: 3.99787117016323
iteration: 79 HingeLoss: 3.2334501624233005
iteration: 80 HingeLoss: 2.6151918128088107
iteration: 81 HingeLoss: 2.1151487959401845
iteration: 82 HingeLoss: 1.7107175110655195
iteration: 83 HingeLoss: 1.3836163244323205
iteration: 84 HingeLoss: 1.1190591788840836
iteration: 85 HingeLoss: 0.9050872150981008
iteration: 86 HingeLoss: 0.7320281915304229
iteration: 87 HingeLoss: 0.5920592670588326
iteration: 88 HingeLoss: 0.478853382651007
iteration: 89 HingeLoss: 0.3872932573379114
iteration: 90 HingeLoss: 0.31324007016303823
iteration: 91 HingeLoss: 0.2533463717653533
iteration: 92 HingeLoss: 0.20490476857977108
iteration: 93 HingeLoss: 0.16572553967978854
iteration: 94 HingeLoss: 0.1340376541381703
iteration: 95 HingeLoss: 0.10840871456250784
iteration: 96 HingeLoss: 0.08768020798827544
iteration: 97 HingeLoss: 0.07091513725526637
iteration: 98 HingeLoss: 0.05735566563215429
iteration: 99 HingeLoss: 0.04638886008590757
[-9.06794852e-04 -2.74196942e-04 -4.91047837e-05 ... 4.06917931e-04
 3.54802508e-04 -5.04281510e-05]
CROSS VALIDATION 16
iteration: 0 HingeLoss: 197.4167546119514
iteration: 1 HingeLoss: 19.401613012172106
iteration: 2 HingeLoss: 15.691888526493084
iteration: 3 HingeLoss: 12.69148938149644

```

# Output\_hinge\_train.txt

```

iteration: 4 HingeLoss: 10.264787597024476
iteration: 5 HingeLoss: 8.302088213984224
iteration: 6 HingeLoss: 6.71467071883254
iteration: 7 HingeLoss: 5.43077858247783
iteration: 8 HingeLoss: 4.392375627471996
iteration: 9 HingeLoss: 3.552522600545326
iteration: 10 HingeLoss: 2.873255362872717
iteration: 11 HingeLoss: 2.323868785242792
iteration: 12 HingeLoss: 1.8795287745069942
iteration: 13 HingeLoss: 1.520149690306496
iteration: 14 HingeLoss: 1.2294864075944145
iteration: 15 HingeLoss: 0.9943999831718144
iteration: 16 HingeLoss: 0.8042637319324502
iteration: 17 HingeLoss: 0.6504828654951306
iteration: 18 HingeLoss: 0.5261059792987093
iteration: 19 HingeLoss: 0.425510826089432
iteration: 20 HingeLoss: 0.34415017172140916
iteration: 21 HingeLoss: 0.27834624511053513
iteration: 22 HingeLoss: 0.2251244907988938
iteration: 23 HingeLoss: 635.9587912373559
iteration: 24 HingeLoss: 64.2173034594073
iteration: 25 HingeLoss: 71.24322791460376
iteration: 26 HingeLoss: 39.27092931276999
iteration: 27 HingeLoss: 12.623217969951993
iteration: 28 HingeLoss: 10.209570158204842
iteration: 29 HingeLoss: 8.257428736747327
iteration: 30 HingeLoss: 6.678550446873033
iteration: 31 HingeLoss: 5.4015647598549545
iteration: 32 HingeLoss: 4.368747692632593
iteration: 33 HingeLoss: 3.5334124925672654
iteration: 34 HingeLoss: 2.8577992415732756
iteration: 35 HingeLoss: 2.311367982740926
iteration: 36 HingeLoss: 1.8694182131207882
iteration: 37 HingeLoss: 1.51197233917012
iteration: 38 HingeLoss: 1.2228726233490792
iteration: 39 HingeLoss: 0.9890508008615103
iteration: 40 HingeLoss: 0.7999373507976174
iteration: 41 HingeLoss: 0.6469837187773645
iteration: 42 HingeLoss: 0.5232758939754638
iteration: 43 HingeLoss: 0.42322187292945684
iteration: 44 HingeLoss: 0.34229888245972967
iteration: 45 HingeLoss: 0.2768489353401391
iteration: 46 HingeLoss: 0.22391347715832993
iteration: 47 HingeLoss: 0.1810996498561024
iteration: 48 HingeLoss: 0.14647212661885461
iteration: 49 HingeLoss: 0.11846562869280364
iteration: 50 HingeLoss: 0.09581416960033867
iteration: 51 HingeLoss: 0.07749382835766047
iteration: 52 HingeLoss: 0.06267646485458155
iteration: 53 HingeLoss: 0.050692285178336675
iteration: 54 HingeLoss: 0.04099956471003754
iteration: 55 HingeLoss: 0.03316016037743977

```

# Output\_hinge\_train.txt

```

iteration: 56 HingeLoss: 0.026819705136730917
iteration: 57 HingeLoss: 0.021691589408311753
iteration: 58 HingeLoss: 0.01754400537440565
iteration: 59 HingeLoss: 0.01418946849783332
iteration: 60 HingeLoss: 0.011476342599890766
iteration: 61 HingeLoss: 0.009281985402778033
iteration: 62 HingeLoss: 0.007507204692390806
iteration: 63 HingeLoss: 0.006071774501669324
iteration: 64 HingeLoss: 931.0543976241865
iteration: 65 HingeLoss: 43.33124705287689
iteration: 66 HingeLoss: 18.22795259057862
iteration: 67 HingeLoss: 14.74264020925021
iteration: 68 HingeLoss: 11.923744000285538
iteration: 69 HingeLoss: 9.643840517462937
iteration: 70 HingeLoss: 7.79987057119246
iteration: 71 HingeLoss: 6.308480611763493
iteration: 72 HingeLoss: 5.1022548727897234
iteration: 73 HingeLoss: 4.126667955254147
iteration: 74 HingeLoss: 3.337620098858451
iteration: 75 HingeLoss: 2.699443726777343
iteration: 76 HingeLoss: 2.1832911530374237
iteration: 77 HingeLoss: 1.7658305715534035
iteration: 78 HingeLoss: 1.4281913812065774
iteration: 79 HingeLoss: 1.155111172165514
iteration: 80 HingeLoss: 0.934245814405033
iteration: 81 HingeLoss: 0.7556114621392123
iteration: 82 HingeLoss: 0.6111332509204358
iteration: 83 HingeLoss: 0.49428028701842364
iteration: 84 HingeLoss: 0.39977042939007523
iteration: 85 HingeLoss: 0.32333151940726323
iteration: 86 HingeLoss: 0.26150826513534237
iteration: 87 HingeLoss: 0.21150605069206965
iteration: 88 HingeLoss: 0.1710646103525793
iteration: 89 HingeLoss: 0.13835585705150227
iteration: 90 HingeLoss: 0.11190124679208434
iteration: 91 HingeLoss: 0.09050494355986509
iteration: 92 HingeLoss: 0.07319976357362433
iteration: 93 HingeLoss: 0.05920345537468105
iteration: 94 HingeLoss: 351.7009080573486
iteration: 95 HingeLoss: 149.43203036504147
iteration: 96 HingeLoss: 19.83689185831428
iteration: 97 HingeLoss: 16.043939004322866
iteration: 98 HingeLoss: 12.976225338776782
iteration: 99 HingeLoss: 10.495080042210562
[-0.01336451 -0.00633122 -0.00496793 ... 0.00762332 -0.00541546
 0.00249833]
CROSS VALIDATION 17
iteration: 0 HingeLoss: 197.4167546119514
iteration: 1 HingeLoss: 23.410113377426804
iteration: 2 HingeLoss: 18.933935507356015
iteration: 3 HingeLoss: 15.313634240763422
iteration: 4 HingeLoss: 12.385559968173208

```

# Output\_hinge\_train.txt

```

iteration: 5 HingeLoss: 10.017354033236156
iteration: 6 HingeLoss: 8.101965683025412
iteration: 7 HingeLoss: 6.552813019399247
iteration: 8 HingeLoss: 5.2998692104030205
iteration: 9 HingeLoss: 4.286497045501396
iteration: 10 HingeLoss: 3.4668887460517093
iteration: 11 HingeLoss: 2.8039953019713497
iteration: 12 HingeLoss: 2.267851733757407
iteration: 13 HingeLoss: 1.8342225761543103
iteration: 14 HingeLoss: 1.483506354844467
iteration: 15 HingeLoss: 1.1998495348793317
iteration: 16 HingeLoss: 0.9704298883849951
iteration: 17 HingeLoss: 0.7848768873887375
iteration: 18 HingeLoss: 0.634802921602346
iteration: 19 HingeLoss: 12.578617337989145
iteration: 20 HingeLoss: 43.155287995782544
iteration: 21 HingeLoss: 47.69691217249497
iteration: 22 HingeLoss: 13.158720334040249
iteration: 23 HingeLoss: 10.642680714408314
iteration: 24 HingeLoss: 8.607725516882484
iteration: 25 HingeLoss: 6.9618680257579335
iteration: 26 HingeLoss: 5.630710030542945
iteration: 27 HingeLoss: 4.554078780401077
iteration: 28 HingeLoss: 3.683306976491475
iteration: 29 HingeLoss: 2.979032848851146
iteration: 30 HingeLoss: 2.409420874007
iteration: 31 HingeLoss: 1.9487227038598982
iteration: 32 HingeLoss: 1.576113255059314
iteration: 33 HingeLoss: 1.2747493462529405
iteration: 34 HingeLoss: 1.0310083304966209
iteration: 35 HingeLoss: 0.833872306487545
iteration: 36 HingeLoss: 0.6744300729286274
iteration: 37 HingeLoss: 0.54547431271158
iteration: 38 HingeLoss: 0.4411757983094242
iteration: 39 HingeLoss: 0.3568198913829914
iteration: 40 HingeLoss: 0.28859342551078015
iteration: 41 HingeLoss: 0.23341233843561512
iteration: 42 HingeLoss: 0.18878226223468492
iteration: 43 HingeLoss: 0.152685769626853
iteration: 44 HingeLoss: 0.12349117957683381
iteration: 45 HingeLoss: 0.09987879990746545
iteration: 46 HingeLoss: 0.08078127284182908
iteration: 47 HingeLoss: 0.06533532689611617
iteration: 48 HingeLoss: 0.05284275414897891
iteration: 49 HingeLoss: 0.042738848930675775
iteration: 50 HingeLoss: 0.034566881256215196
iteration: 51 HingeLoss: 0.027957451117118517
iteration: 52 HingeLoss: 0.022611790377401627
iteration: 53 HingeLoss: 405.98550443568837
iteration: 54 HingeLoss: 71.9209419893009
iteration: 55 HingeLoss: 153.72989785688998
iteration: 56 HingeLoss: 25.757902284119453

```

# Output\_hinge\_train.txt

```

iteration: 57 HingeLoss: 41.295027950958726
iteration: 58 HingeLoss: 14.024047649377826
iteration: 59 HingeLoss: 11.342551377877781
iteration: 60 HingeLoss: 9.173776000789966
iteration: 61 HingeLoss: 7.4196856870148125
iteration: 62 HingeLoss: 6.000989743956239
iteration: 63 HingeLoss: 4.853558415566354
iteration: 64 HingeLoss: 3.9255240049426705
iteration: 65 HingeLoss: 3.174936282616679
iteration: 66 HingeLoss: 2.5678661972220014
iteration: 67 HingeLoss: 2.076872169982848
iteration: 68 HingeLoss: 1.6797596444532963
iteration: 69 HingeLoss: 1.3585778190465936
iteration: 70 HingeLoss: 1.0988082113415227
iteration: 71 HingeLoss: 0.8887083745845764
iteration: 72 HingeLoss: 0.7187811001999138
iteration: 73 HingeLoss: 0.5813451125022913
iteration: 74 HingeLoss: 0.47018784959190585
iteration: 75 HingeLoss: 0.3802846349774538
iteration: 76 HingeLoss: 0.3075715455545126
iteration: 77 HingeLoss: 0.24876170881950116
iteration: 78 HingeLoss: 0.20119672534477184
iteration: 79 HingeLoss: 0.16272650031855007
iteration: 80 HingeLoss: 0.1316120521372648
iteration: 81 HingeLoss: 0.10644690467670248
iteration: 82 HingeLoss: 0.08609350991224865
iteration: 83 HingeLoss: 0.06963182698005407
iteration: 84 HingeLoss: 0.056317733282359415
iteration: 85 HingeLoss: 0.04554938768117485
iteration: 86 HingeLoss: 0.03684002528524779
iteration: 87 HingeLoss: 0.1017328828633973
iteration: 88 HingeLoss: 349.1924802831969
iteration: 89 HingeLoss: 20.954380509821988
iteration: 90 HingeLoss: 16.947755987894208
iteration: 91 HingeLoss: 13.707226175957423
iteration: 92 HingeLoss: 11.086308392276884
iteration: 93 HingeLoss: 8.966528471256085
iteration: 94 HingeLoss: 7.252065338706842
iteration: 95 HingeLoss: 5.86541958188928
iteration: 96 HingeLoss: 4.743910219339644
iteration: 97 HingeLoss: 3.836841312877782
iteration: 98 HingeLoss: 3.103210343271405
iteration: 99 HingeLoss: 2.5098547605461983
[-2.88962908e-03 -4.77500189e-06 -3.23426616e-03 ... 2.14046959e-03
 1.81311878e-03 7.77630347e-04]

```

## CROSS VALIDATION 18

```

iteration: 0 HingeLoss: 33.91853278706019
iteration: 1 HingeLoss: 26.2027520566531
iteration: 2 HingeLoss: 30.929138676280925
iteration: 3 HingeLoss: 19.175722253364363
iteration: 4 HingeLoss: 15.509189665107069
iteration: 5 HingeLoss: 12.543723823808628

```

# Output\_hinge\_train.txt

```

iteration: 6 HingeLoss: 10.145275850354881
iteration: 7 HingeLoss: 8.205427951501445
iteration: 8 HingeLoss: 6.636492576485839
iteration: 9 HingeLoss: 5.367548649268508
iteration: 10 HingeLoss: 4.341235700970225
iteration: 11 HingeLoss: 3.5111609866725315
iteration: 12 HingeLoss: 2.839802379671757
iteration: 13 HingeLoss: 2.2968122470601777
iteration: 14 HingeLoss: 1.8576456361922564
iteration: 15 HingeLoss: 1.502450761520047
iteration: 16 HingeLoss: 1.2151716381275113
iteration: 17 HingeLoss: 0.9828222980269679
iteration: 18 HingeLoss: 0.7948997813901011
iteration: 19 HingeLoss: 0.6429093679727367
iteration: 20 HingeLoss: 0.5199805876210937
iteration: 21 HingeLoss: 0.4205566522624442
iteration: 22 HingeLoss: 0.34014327067739825
iteration: 23 HingeLoss: 0.2751054916494773
iteration: 24 HingeLoss: 0.22250339212937278
iteration: 25 HingeLoss: 0.17995918297464317
iteration: 26 HingeLoss: 0.1455497250040616
iteration: 27 HingeLoss: 0.1177195967362386
iteration: 28 HingeLoss: 0.09521078418633848
iteration: 29 HingeLoss: 0.07700581446680191
iteration: 30 HingeLoss: 0.062281762642454726
iteration: 31 HingeLoss: 0.05037305279750477
iteration: 32 HingeLoss: 0.04074137179943173
iteration: 33 HingeLoss: 276.9881476023964
iteration: 34 HingeLoss: 128.00800237360957
iteration: 35 HingeLoss: 14.831247882836838
iteration: 36 HingeLoss: 11.995409265211757
iteration: 37 HingeLoss: 9.701802881094165
iteration: 38 HingeLoss: 7.846750124364792
iteration: 39 HingeLoss: 6.346396465568563
iteration: 40 HingeLoss: 5.1329209494155545
iteration: 41 HingeLoss: 4.151470462945418
iteration: 42 HingeLoss: 3.35768019312096
iteration: 43 HingeLoss: 2.7156681903206965
iteration: 44 HingeLoss: 2.196413385357217
iteration: 45 HingeLoss: 1.7764437410178058
iteration: 46 HingeLoss: 1.4367752382314394
iteration: 47 HingeLoss: 1.1620537355223328
iteration: 48 HingeLoss: 0.9398609109547357
iteration: 49 HingeLoss: 0.7601529128458183
iteration: 50 HingeLoss: 0.6148063443994122
iteration: 51 HingeLoss: 0.4972510592621192
iteration: 52 HingeLoss: 0.40217316914457013
iteration: 53 HingeLoss: 0.32527483846852145
iteration: 54 HingeLoss: 0.26308000796216496
iteration: 55 HingeLoss: 91.62588318072656
iteration: 56 HingeLoss: 43.99845267358616
iteration: 57 HingeLoss: 96.0963827993047

```

# Output\_hinge\_train.txt

```

iteration: 58 HingeLoss: 14.216483431223544
iteration: 59 HingeLoss: 11.498192088541227
iteration: 60 HingeLoss: 9.299657115952021
iteration: 61 HingeLoss: 7.52149745006123
iteration: 62 HingeLoss: 6.083334383827565
iteration: 63 HingeLoss: 4.920158182750886
iteration: 64 HingeLoss: 3.9793894295284726
iteration: 65 HingeLoss: 3.218502260223919
iteration: 66 HingeLoss: 2.603102054350562
iteration: 67 HingeLoss: 2.1053706840935007
iteration: 68 HingeLoss: 1.7028090427849965
iteration: 69 HingeLoss: 1.377220010754925
iteration: 70 HingeLoss: 1.113885885243849
iteration: 71 HingeLoss: 0.9009030914859841
iteration: 72 HingeLoss: 0.7286441016992731
iteration: 73 HingeLoss: 0.5893222389385044
iteration: 74 HingeLoss: 0.4766396935040723
iteration: 75 HingeLoss: 0.3855028410820973
iteration: 76 HingeLoss: 0.31179199405283936
iteration: 77 HingeLoss: 0.25217517796384487
iteration: 78 HingeLoss: 0.20395751524755287
iteration: 79 HingeLoss: 0.16495940782847326
iteration: 80 HingeLoss: 0.13341801207027149
iteration: 81 HingeLoss: 0.10790755240399585
iteration: 82 HingeLoss: 0.08727487154948896
iteration: 83 HingeLoss: 0.07058730398649785
iteration: 84 HingeLoss: 0.05709051638370962
iteration: 85 HingeLoss: 0.04617440923345182
iteration: 86 HingeLoss: 0.03734553833299455
iteration: 87 HingeLoss: 0.030204809472056206
iteration: 88 HingeLoss: 0.024429438052501647
iteration: 89 HingeLoss: 0.019758358155284483
iteration: 90 HingeLoss: 0.015980421496126863
iteration: 91 HingeLoss: 0.012924852823642757
iteration: 92 HingeLoss: 0.01123970353906108
iteration: 93 HingeLoss: 79.77718523015292
iteration: 94 HingeLoss: 181.02870527930997
iteration: 95 HingeLoss: 20.044281432170077
iteration: 96 HingeLoss: 16.211674237082136
iteration: 97 HingeLoss: 13.11188841858218
iteration: 98 HingeLoss: 10.604803389652421
iteration: 99 HingeLoss: 8.577090602281404
[-0.00756443 -0.00195256 -0.00410621 ... 0.00500766 0.00067373
0.00206526]

```

## CROSS VALIDATION 19

```

iteration: 0 HingeLoss: 208.17607019419785
iteration: 1 HingeLoss: 74.62022771423747
iteration: 2 HingeLoss: 17.455039685107234
iteration: 3 HingeLoss: 14.117513672310443
iteration: 4 HingeLoss: 11.418146041679865
iteration: 5 HingeLoss: 9.234916434672227
iteration: 6 HingeLoss: 7.469135641116049

```

Output\_hinge\_train.txt

iteration: 7 HingeLoss: 6.040984520004501  
iteration: 8 HingeLoss: 4.885905909921467  
iteration: 9 HingeLoss: 3.9516864315003675  
iteration: 10 HingeLoss: 3.1960962697202446  
iteration: 11 HingeLoss: 2.584980246380846  
iteration: 12 HingeLoss: 2.0907138929091342  
iteration: 13 HingeLoss: 1.690954732873914  
iteration: 14 HingeLoss: 1.3676323280418181  
iteration: 15 HingeLoss: 1.106131434710944  
iteration: 16 HingeLoss: 0.8946313462826238  
iteration: 17 HingeLoss: 0.7235715581671469  
iteration: 18 HingeLoss: 0.5852196013071915  
iteration: 19 HingeLoss: 0.47332150896267544  
iteration: 20 HingeLoss: 0.38281911669787916  
iteration: 21 HingeLoss: 0.3096214165938121  
iteration: 22 HingeLoss: 0.25041963013883667  
iteration: 23 HingeLoss: 0.20253764047963146  
iteration: 24 HingeLoss: 0.16381102307480244  
iteration: 25 HingeLoss: 0.13248920653596757  
iteration: 26 HingeLoss: 0.10715634100224578  
iteration: 27 HingeLoss: 0.08666729703655042  
iteration: 28 HingeLoss: 0.07009590198179907  
iteration: 29 HingeLoss: 0.05669307388887219  
iteration: 30 HingeLoss: 0.04585296053118322  
iteration: 31 HingeLoss: 0.05457559511441374  
iteration: 32 HingeLoss: 162.91619971889102  
iteration: 33 HingeLoss: 68.48777901145593  
iteration: 34 HingeLoss: 106.13979702364706  
iteration: 35 HingeLoss: 14.215816564008405  
iteration: 36 HingeLoss: 11.497652731014849  
iteration: 37 HingeLoss: 9.299220887367596  
iteration: 38 HingeLoss: 7.521144631441745  
iteration: 39 HingeLoss: 6.0830490266027  
iteration: 40 HingeLoss: 4.919927387828837  
iteration: 41 HingeLoss: 3.979202764214252  
iteration: 42 HingeLoss: 3.2183512866269974  
iteration: 43 HingeLoss: 2.60297994796426  
iteration: 44 HingeLoss: 2.105271925304682  
iteration: 45 HingeLoss: 1.702729167369268  
iteration: 46 HingeLoss: 1.3771554080789086  
iteration: 47 HingeLoss: 1.113833635052593  
iteration: 48 HingeLoss: 0.9008608318977659  
iteration: 49 HingeLoss: 0.7286099224407188  
iteration: 50 HingeLoss: 0.5892945949939101  
iteration: 51 HingeLoss: 0.4766173352755719  
iteration: 52 HingeLoss: 0.38548475790370096  
iteration: 53 HingeLoss: 0.31177736850498267  
iteration: 54 HingeLoss: 0.25216334892331826  
iteration: 55 HingeLoss: 0.2039479480025405  
iteration: 56 HingeLoss: 0.16495166990780946  
iteration: 57 HingeLoss: 0.13341175369431024  
iteration: 58 HingeLoss: 0.1079024906734131



# Output\_hinge\_train.txt

```

iteration: 59 HingeLoss: 0.08727077765729518
iteration: 60 HingeLoss: 0.07058399287520502
iteration: 61 HingeLoss: 0.05708783838011923
iteration: 62 HingeLoss: 0.04617224328293072
iteration: 63 HingeLoss: 0.037343786527404485
iteration: 64 HingeLoss: 0.030203392623981664
iteration: 65 HingeLoss: 483.80634814979294
iteration: 66 HingeLoss: 165.71498568098443
iteration: 67 HingeLoss: 17.06227432459383
iteration: 68 HingeLoss: 13.799847803478933
iteration: 69 HingeLoss: 11.178446362810035
iteration: 70 HingeLoss: 10.391369949535237
iteration: 71 HingeLoss: 8.404467132879983
iteration: 72 HingeLoss: 6.797474070376937
iteration: 73 HingeLoss: 5.497749352446263
iteration: 74 HingeLoss: 4.446541116507298
iteration: 75 HingeLoss: 3.5963312681747523
iteration: 76 HingeLoss: 2.908687505989057
iteration: 77 HingeLoss: 2.352526054083663
iteration: 78 HingeLoss: 1.902706572551031
iteration: 79 HingeLoss: 1.5388957308016045
iteration: 80 HingeLoss: 1.2446480736671184
iteration: 81 HingeLoss: 1.0066626323515253
iteration: 82 HingeLoss: 0.8141816765820409
iteration: 83 HingeLoss: 0.6585044295658948
iteration: 84 HingeLoss: 0.5325937640580272
iteration: 85 HingeLoss: 0.43075810089917227
iteration: 86 HingeLoss: 269.05453235420674
iteration: 87 HingeLoss: 62.369410918306635
iteration: 88 HingeLoss: 13.811139515364296
iteration: 89 HingeLoss: 11.170352772368648
iteration: 90 HingeLoss: 9.034502976409378
iteration: 91 HingeLoss: 7.307042641719733
iteration: 92 HingeLoss: 5.90988483896993
iteration: 93 HingeLoss: 62.8028408731359
iteration: 94 HingeLoss: 5.734357744843643
iteration: 95 HingeLoss: 4.63790832476999
iteration: 96 HingeLoss: 3.7511077240189303
iteration: 97 HingeLoss: 3.0338696179149474
iteration: 98 HingeLoss: 2.4537724682152944
iteration: 99 HingeLoss: 1.984593962185285
[-0.00385361 -0.00620286 -0.00563381 ... 0.0028657 0.00304499
0.00177665]

```

Accuracy (Hinge Loss): 0.9

eta = 0.001 lambda = 0.3

CROSS VALIDATION 0

```

iteration: 0 HingeLoss: 99.34984661674488
iteration: 1 HingeLoss: 8.004768226822545
iteration: 2 HingeLoss: 7.511373246929617
iteration: 3 HingeLoss: 7.048389966574449
iteration: 4 HingeLoss: 6.613943880530066
iteration: 5 HingeLoss: 6.206276023637915

```

# Output\_hinge\_train.txt

```

iteration: 6 HingeLoss: 5.823735849191381
iteration: 7 HingeLoss: 5.4647745462787904
iteration: 8 HingeLoss: 5.1279387690297
iteration: 9 HingeLoss: 4.811864752375518
iteration: 10 HingeLoss: 4.515272790500784
iteration: 11 HingeLoss: 4.236962055629635
iteration: 12 HingeLoss: 3.975805736169992
iteration: 13 HingeLoss: 3.7307464745310748
iteration: 14 HingeLoss: 3.5007920861430506
iteration: 15 HingeLoss: 3.2850115423461568
iteration: 16 HingeLoss: 3.0825312008850645
iteration: 17 HingeLoss: 2.892531268746652
iteration: 18 HingeLoss: 2.7142424830200684
iteration: 19 HingeLoss: 2.5469429963407646
iteration: 20 HingeLoss: 2.3899554543083554
iteration: 21 HingeLoss: 2.2426442530455644
iteration: 22 HingeLoss: 2.10441296579471
iteration: 23 HingeLoss: 1.9747019281327436
iteration: 24 HingeLoss: 1.8529859720278747
iteration: 25 HingeLoss: 1.7387722995636214
iteration: 26 HingeLoss: 1.6315984877214633
iteration: 27 HingeLoss: 1.5310306161439715
iteration: 28 HingeLoss: 1.436661510298209
iteration: 29 HingeLoss: 1.3481090929263577
iteration: 30 HingeLoss: 1.265014837109047
iteration: 31 HingeLoss: 1.1870423146781972
iteration: 32 HingeLoss: 1.113875834102258
iteration: 33 HingeLoss: 1.0452191623289822
iteration: 34 HingeLoss: 0.9807943254107848
iteration: 35 HingeLoss: 0.9203404830567209
iteration: 36 HingeLoss: 0.8636128725544152
iteration: 37 HingeLoss: 0.81038181778615
iteration: 38 HingeLoss: 0.7604317993268515
iteration: 39 HingeLoss: 0.7135605818590417
iteration: 40 HingeLoss: 0.6695783953718659
iteration: 41 HingeLoss: 0.6283071668290776
iteration: 42 HingeLoss: 0.5895797991951907
iteration: 43 HingeLoss: 0.5532394949007519
iteration: 44 HingeLoss: 0.5191391210076173
iteration: 45 HingeLoss: 0.48714061350393906
iteration: 46 HingeLoss: 0.4571144183169973
iteration: 47 HingeLoss: 0.42893896678068116
iteration: 48 HingeLoss: 0.40250018343391397
iteration: 49 HingeLoss: 0.3776910241572178
iteration: 50 HingeLoss: 0.35441104277744956
iteration: 51 HingeLoss: 0.33256598438599344
iteration: 52 HingeLoss: 0.3120674037238606
iteration: 53 HingeLoss: 0.2928323070886278
iteration: 54 HingeLoss: 0.2747828163133847
iteration: 55 HingeLoss: 0.2578458534572245
iteration: 56 HingeLoss: 0.24195284493066765
iteration: 57 HingeLoss: 0.2270394438580933

```

# Output\_hinge\_train.txt

```

iteration: 58 HingeLoss: 0.21304526955309522
iteration: 59 HingeLoss: 0.19991366305195885
iteration: 60 HingeLoss: 0.18759145771547825
iteration: 61 HingeLoss: 0.17602876397033365
iteration: 62 HingeLoss: 0.16517876731850115
iteration: 63 HingeLoss: 0.15499753879688524
iteration: 64 HingeLoss: 0.14544385711977081
iteration: 65 HingeLoss: 0.13647904178399375
iteration: 66 HingeLoss: 0.12806679646111457
iteration: 67 HingeLoss: 0.12017306204252726
iteration: 68 HingeLoss: 0.11276587874252054
iteration: 69 HingeLoss: 0.10581525670098023
iteration: 70 HingeLoss: 0.0992930545618348
iteration: 71 HingeLoss: 0.09317286553563855
iteration: 72 HingeLoss: 0.08742991048498736
iteration: 73 HingeLoss: 0.08204093759989678
iteration: 74 HingeLoss: 0.07698412825695275
iteration: 75 HingeLoss: 0.07223900868108073
iteration: 76 HingeLoss: 0.06778636705227559
iteration: 77 HingeLoss: 0.06360817572167561
iteration: 78 HingeLoss: 0.0596875182220543
iteration: 79 HingeLoss: 0.05600852077721275
iteration: 80 HingeLoss: 0.05255628803297064
iteration: 81 HingeLoss: 0.04931684274954766
iteration: 82 HingeLoss: 0.04627706921116319
iteration: 83 HingeLoss: 0.043424660123734964
iteration: 84 HingeLoss: 0.040748066785677446
iteration: 85 HingeLoss: 0.03823645233005499
iteration: 86 HingeLoss: 0.035879647848777334
iteration: 87 HingeLoss: 0.03366811122119654
iteration: 88 HingeLoss: 0.031592888480411564
iteration: 89 HingeLoss: 0.029645577560862356
iteration: 90 HingeLoss: 0.027818294280436636
iteration: 91 HingeLoss: 0.026103640419359156
iteration: 92 HingeLoss: 0.02449467376662267
iteration: 93 HingeLoss: 0.022984880012686105
iteration: 94 HingeLoss: 0.021568146374640194
iteration: 95 HingeLoss: 0.020238736847055717
iteration: 96 HingeLoss: 0.01899126897831081
iteration: 97 HingeLoss: 0.017820692078370472
iteration: 98 HingeLoss: 0.01672226676978713
iteration: 99 HingeLoss: 0.01569154579912907
[-8.79738834e-04 6.08834804e-05 9.94929958e-05 ... 2.72399193e-04
 3.58926132e-04 -4.36746913e-05]

```

## CROSS VALIDATION 1

```

iteration: 0 HingeLoss: 95.12800011712939
iteration: 1 HingeLoss: 6.971461563557804
iteration: 2 HingeLoss: 6.541757162317279
iteration: 3 HingeLoss: 6.138538723993157
iteration: 4 HingeLoss: 5.760173716478281
iteration: 5 HingeLoss: 5.405130233083169
iteration: 6 HingeLoss: 5.071970790223281

```

# Output\_hinge\_train.txt

```

iteration: 7 HingeLoss: 4.759346507402155
iteration: 8 HingeLoss: 4.465991645926637
iteration: 9 HingeLoss: 4.190718484242774
iteration: 10 HingeLoss: 3.9324125091438993
iteration: 11 HingeLoss: 3.6900279033812513
iteration: 12 HingeLoss: 3.462583311407621
iteration: 13 HingeLoss: 3.2491578661105365
iteration: 14 HingeLoss: 3.0488874604482223
iteration: 15 HingeLoss: 2.8609612488930907
iteration: 16 HingeLoss: 2.684618364517988
iteration: 17 HingeLoss: 2.5191448384334834
iteration: 18 HingeLoss: 2.363870709103741
iteration: 19 HingeLoss: 2.21816730983734
iteration: 20 HingeLoss: 2.0814447234707423
iteration: 21 HingeLoss: 1.9531493939390407
iteration: 22 HingeLoss: 1.8327618850638507
iteration: 23 HingeLoss: 1.7197947774842037
iteration: 24 HingeLoss: 1.613790695215653
iteration: 25 HingeLoss: 1.5143204538476045
iteration: 26 HingeLoss: 1.4209813228813892
iteration: 27 HingeLoss: 1.3333953951736988
iteration: 28 HingeLoss: 1.2512080568836816
iteration: 29 HingeLoss: 1.1740865517288663
iteration: 30 HingeLoss: 1.1017186337369713
iteration: 31 HingeLoss: 1.0338113030388918
iteration: 32 HingeLoss: 0.9700896195844255
iteration: 33 HingeLoss: 0.9102955899777511
iteration: 34 HingeLoss: 0.8541871229257356
iteration: 35 HingeLoss: 0.8015370490699386
iteration: 36 HingeLoss: 0.7521322012338534
iteration: 37 HingeLoss: 0.7057725513615287
iteration: 38 HingeLoss: 0.6622704006532593
iteration: 39 HingeLoss: 0.62144961961939
iteration: 40 HingeLoss: 0.5831449349754116
iteration: 41 HingeLoss: 0.5472012604911515
iteration: 42 HingeLoss: 0.5134730690848415
iteration: 43 HingeLoss: 0.48182380361982047
iteration: 44 HingeLoss: 0.45212532401833133
iteration: 45 HingeLoss: 0.424257388453924
iteration: 46 HingeLoss: 0.39810716652192146
iteration: 47 HingeLoss: 0.3735687824169163
iteration: 48 HingeLoss: 0.3505428862677178
iteration: 49 HingeLoss: 0.32893625189420467
iteration: 50 HingeLoss: 0.30866139935749104
iteration: 51 HingeLoss: 0.2896362407752089
iteration: 52 HingeLoss: 0.2717837479678971
iteration: 53 HingeLoss: 0.25503164059088257
iteration: 54 HingeLoss: 0.23931209348897392
iteration: 55 HingeLoss: 0.22456146208911948
iteration: 56 HingeLoss: 0.21072002471921214
iteration: 57 HingeLoss: 0.19773174080975497
iteration: 58 HingeLoss: 0.18554402399940223

```

# Output\_hinge\_train.txt

```

iteration: 59 HingeLoss: 0.17410752922573938
iteration: 60 HingeLoss: 99.8450422946219
iteration: 61 HingeLoss: 81.95997809500928
iteration: 62 HingeLoss: 3.3726960931074954
iteration: 63 HingeLoss: 3.1648110833369807
iteration: 64 HingeLoss: 2.9697396138601175
iteration: 65 HingeLoss: 2.7866918883609664
iteration: 66 HingeLoss: 2.6149267917003947
iteration: 67 HingeLoss: 2.453748889323498
iteration: 68 HingeLoss: 2.3025056116164264
iteration: 69 HingeLoss: 2.1605846118128142
iteration: 70 HingeLoss: 2.0274112867525944
iteration: 71 HingeLoss: 1.9024464504553837
iteration: 72 HingeLoss: 1.7851841510892967
iteration: 73 HingeLoss: 1.675149622496643
iteration: 74 HingeLoss: 1.5718973619827286
iteration: 75 HingeLoss: 1.4750093265852229
iteration: 76 HingeLoss: 1.3840932405211943
iteration: 77 HingeLoss: 1.2987810069591281
iteration: 78 HingeLoss: 1.2187272176855461
iteration: 79 HingeLoss: 1.143607754632259
iteration: 80 HingeLoss: 1.073118477602166
iteration: 81 HingeLoss: 1.0069739928805364
iteration: 82 HingeLoss: 0.9449064977461754
iteration: 83 HingeLoss: 0.8866646962041922
iteration: 84 HingeLoss: 0.832012781550432
iteration: 85 HingeLoss: 0.780729481648233
iteration: 86 HingeLoss: 0.7326071630520641
iteration: 87 HingeLoss: 0.6874509903508624
iteration: 88 HingeLoss: 0.645078137327462
iteration: 89 HingeLoss: 0.6053170467402845
iteration: 90 HingeLoss: 0.5680067357303404
iteration: 91 HingeLoss: 0.5329961440412961
iteration: 92 HingeLoss: 0.5001435224137176
iteration: 93 HingeLoss: 0.46931585867724346
iteration: 94 HingeLoss: 0.4403883392170825
iteration: 95 HingeLoss: 0.41324384363443595
iteration: 96 HingeLoss: 0.3877724705548656
iteration: 97 HingeLoss: 0.3638710926647034
iteration: 98 HingeLoss: 0.34144293917397034
iteration: 99 HingeLoss: 0.32039720401529026
[-0.00618497 -0.00133888 -0.003112 ... 0.00201005 -0.00047023
0.00038856]

```

## CROSS VALIDATION 2

```

iteration: 0 HingeLoss: 184.355437181758
iteration: 1 HingeLoss: 7.8943032335206
iteration: 2 HingeLoss: 7.407717054532919
iteration: 3 HingeLoss: 6.9511228966999985
iteration: 4 HingeLoss: 6.522672122777722
iteration: 5 HingeLoss: 6.120630041149139
iteration: 6 HingeLoss: 5.743368882485514
iteration: 7 HingeLoss: 5.389361209309391

```

Output\_hinge\_train.txt

iteration: 8 HingeLoss: 5.057173731776586  
iteration: 9 HingeLoss: 4.745461504638761  
iteration: 10 HingeLoss: 4.452962481891501  
iteration: 11 HingeLoss: 4.178492407060999  
iteration: 12 HingeLoss: 3.9209400184413745  
iteration: 13 HingeLoss: 3.6792625498698466  
iteration: 14 HingeLoss: 3.4524815088234626  
iteration: 15 HingeLoss: 3.2396787147439605  
iteration: 16 HingeLoss: 3.0399925815509286  
iteration: 17 HingeLoss: 2.8526146292920456  
iteration: 18 HingeLoss: 2.676786210806966  
iteration: 19 HingeLoss: 2.5117954401518845  
iteration: 20 HingeLoss: 2.356974310348751  
iteration: 21 HingeLoss: 2.2116959887896166  
iteration: 22 HingeLoss: 2.0753722793458405  
iteration: 23 HingeLoss: 1.9474512409068994  
iteration: 24 HingeLoss: 1.8274149527068184  
iteration: 25 HingeLoss: 1.714777417390607  
iteration: 26 HingeLoss: 1.6090825933307074  
iteration: 27 HingeLoss: 1.5099025482268142  
iteration: 28 HingeLoss: 1.4168357265134308  
iteration: 29 HingeLoss: 1.3295053235603191  
iteration: 30 HingeLoss: 1.2475577600833978  
iteration: 31 HingeLoss: 1.1706612505893372  
iteration: 32 HingeLoss: 1.0985044600578475  
iteration: 33 HingeLoss: 1.0307952434228926  
iteration: 34 HingeLoss: 0.9672594627492969  
iteration: 35 HingeLoss: 0.9183993284579808  
iteration: 36 HingeLoss: 29.903322260033363  
iteration: 37 HingeLoss: 5.474229660327451  
iteration: 38 HingeLoss: 3.6609971348671166  
iteration: 39 HingeLoss: 3.4353419307984727  
iteration: 40 HingeLoss: 3.2235955797683364  
iteration: 41 HingeLoss: 3.024900772973905  
iteration: 42 HingeLoss: 2.8384530440991864  
iteration: 43 HingeLoss: 2.6634975122291213  
iteration: 44 HingeLoss: 2.499325825522734  
iteration: 45 HingeLoss: 2.3452732932710707  
iteration: 46 HingeLoss: 2.2007161947282907  
iteration: 47 HingeLoss: 2.065069253820045  
iteration: 48 HingeLoss: 1.9377832695048562  
iteration: 49 HingeLoss: 1.8183428921944298  
iteration: 50 HingeLoss: 1.706264537230136  
iteration: 51 HingeLoss: 1.6010944269678862  
iteration: 52 HingeLoss: 1.502406753544258  
iteration: 53 HingeLoss: 1.4098019548853695  
iteration: 54 HingeLoss: 1.322905096978493  
iteration: 55 HingeLoss: 1.241364355856617  
iteration: 56 HingeLoss: 1.1648495931498903  
iteration: 57 HingeLoss: 1.0930510194367058  
iteration: 58 HingeLoss: 1.0256779399826617  
iteration: 59 HingeLoss: 0.9624575777892093

# Output\_hinge\_train.txt

```

iteration: 60 HingeLoss: 0.9031339691867896
iteration: 61 HingeLoss: 0.8474669275010099
iteration: 62 HingeLoss: 0.7952310705959734
iteration: 63 HingeLoss: 0.7462149083575476
iteration: 64 HingeLoss: 0.7002199864219976
iteration: 65 HingeLoss: 0.6570600826831672
iteration: 66 HingeLoss: 0.6165604533250547
iteration: 67 HingeLoss: 0.578557125327157
iteration: 68 HingeLoss: 0.5428962325781094
iteration: 69 HingeLoss: 0.5094333929097146
iteration: 70 HingeLoss: 0.4780331235291171
iteration: 71 HingeLoss: 0.4485682924823565
iteration: 72 HingeLoss: 0.4209196039284106
iteration: 73 HingeLoss: 0.3949751151397283
iteration: 74 HingeLoss: 0.37062978327370755
iteration: 75 HingeLoss: 0.3477850400801076
iteration: 76 HingeLoss: 0.3263483928224893
iteration: 77 HingeLoss: 0.30623304979791577
iteration: 78 HingeLoss: 0.28735756893873193
iteration: 79 HingeLoss: 0.26964552807369785
iteration: 80 HingeLoss: 0.25302521551344903
iteration: 81 HingeLoss: 0.23742933970753358
iteration: 82 HingeLoss: 0.22279475679750585
iteration: 83 HingeLoss: 0.2090622149630012
iteration: 84 HingeLoss: 0.1961761145257139
iteration: 85 HingeLoss: 0.18408428284000014
iteration: 86 HingeLoss: 0.17273776305868987
iteration: 87 HingeLoss: 0.16209061591887533
iteration: 88 HingeLoss: 0.1520997337451548
iteration: 89 HingeLoss: 0.142724665917276
iteration: 90 HingeLoss: 0.13392745509554152
iteration: 91 HingeLoss: 0.1256724835408929
iteration: 92 HingeLoss: 0.11792632890746055
iteration: 93 HingeLoss: 0.11065762892372107
iteration: 94 HingeLoss: 0.10383695441438669
iteration: 95 HingeLoss: 0.0974366901489258
iteration: 96 HingeLoss: 0.09143092303429863
iteration: 97 HingeLoss: 0.08579533719922865
iteration: 98 HingeLoss: 0.0805071155452304
iteration: 99 HingeLoss: 0.07554484736580001
[-3.21326601e-03 -1.45362797e-03 -1.15010825e-03 ... 2.30571619e-03
 1.05429960e-03 8.48641570e-05]

```

## CROSS VALIDATION 3

```

iteration: 0 HingeLoss: 180.2851428389174
iteration: 1 HingeLoss: 7.932315309471447
iteration: 2 HingeLoss: 7.443386156031789
iteration: 3 HingeLoss: 6.984593439150292
iteration: 4 HingeLoss: 6.554079620158959
iteration: 5 HingeLoss: 6.150101654679678
iteration: 6 HingeLoss: 5.771023935466982
iteration: 7 HingeLoss: 5.415311670237337
iteration: 8 HingeLoss: 5.08152466767333

```

# Output\_hinge\_train.txt

```

iteration: 9 HingeLoss: 4.768311506443886
iteration: 10 HingeLoss: 4.474404063632267
iteration: 11 HingeLoss: 4.198612380418851
iteration: 12 HingeLoss: 3.939819844231046
iteration: 13 HingeLoss: 3.696978667854131
iteration: 14 HingeLoss: 3.469105647198974
iteration: 15 HingeLoss: 3.2552781805509343
iteration: 16 HingeLoss: 3.05463053318284
iteration: 17 HingeLoss: 2.866350332208386
iteration: 18 HingeLoss: 2.689675277484483
iteration: 19 HingeLoss: 2.5238900552457944
iteration: 20 HingeLoss: 2.36832344197556
iteration: 21 HingeLoss: 2.2223455867869504
iteration: 22 HingeLoss: 2.0853654613120205
iteration: 23 HingeLoss: 1.9568284667734703
iteration: 24 HingeLoss: 1.8441671871015077
iteration: 25 HingeLoss: 3.2333157190772694
iteration: 26 HingeLoss: 3.034021785886795
iteration: 27 HingeLoss: 2.8470118593499776
iteration: 28 HingeLoss: 2.6715287823519454
iteration: 29 HingeLoss: 2.5068620671514807
iteration: 30 HingeLoss: 2.352345018791228
iteration: 31 HingeLoss: 2.2073520358140746
iteration: 32 HingeLoss: 2.071296077356998
iteration: 33 HingeLoss: 1.9436262863672453
iteration: 34 HingeLoss: 1.823825759317857
iteration: 35 HingeLoss: 1.7114094533926532
iteration: 36 HingeLoss: 1.6059222226673706
iteration: 37 HingeLoss: 1.5069369753359683
iteration: 38 HingeLoss: 1.4140529445211338
iteration: 39 HingeLoss: 1.3268940656679373
iteration: 40 HingeLoss: 1.2451074539511162
iteration: 41 HingeLoss: 1.1683619755313626
iteration: 42 HingeLoss: 1.0963469068759912
iteration: 43 HingeLoss: 1.028770676715924
iteration: 44 HingeLoss: 0.9653596855454558
iteration: 45 HingeLoss: 0.9058571978852716
iteration: 46 HingeLoss: 0.8500223028237464
iteration: 47 HingeLoss: 0.7976289386280235
iteration: 48 HingeLoss: 0.7484649774757581
iteration: 49 HingeLoss: 0.7023313666018305
iteration: 50 HingeLoss: 0.6590413223827444
iteration: 51 HingeLoss: 0.6184195740957593
iteration: 52 HingeLoss: 0.580301654290917
iteration: 53 HingeLoss: 0.5445332329028618
iteration: 54 HingeLoss: 0.5109694924064325
iteration: 55 HingeLoss: 0.47947454148618013
iteration: 56 HingeLoss: 0.44992086484591953
iteration: 57 HingeLoss: 0.42218880693071137
iteration: 58 HingeLoss: 0.3961660874710022
iteration: 59 HingeLoss: 0.3717473468874781
iteration: 60 HingeLoss: 0.3488337197160885

```



# Output\_hinge\_train.txt

```

iteration: 61 HingeLoss: 0.32733243432614106
iteration: 62 HingeLoss: 0.3071564373108272
iteration: 63 HingeLoss: 0.28822404102942795
iteration: 64 HingeLoss: 0.27045859287418234
iteration: 65 HingeLoss: 0.25378816492276673
iteration: 66 HingeLoss: 0.2381452627198585
iteration: 67 HingeLoss: 0.2234665520087176
iteration: 68 HingeLoss: 0.20969260230638503
iteration: 69 HingeLoss: 0.19676764628430132
iteration: 70 HingeLoss: 0.18463935398013306
iteration: 71 HingeLoss: 0.17325862092664993
iteration: 72 HingeLoss: 0.162579369339835
iteration: 73 HingeLoss: 0.1525583615612907
iteration: 74 HingeLoss: 0.1431550249996137
iteration: 75 HingeLoss: 0.13433128786196843
iteration: 76 HingeLoss: 0.12605142501077937
iteration: 77 HingeLoss: 0.11828191332145019
iteration: 78 HingeLoss: 0.11099129595549312
iteration: 79 HingeLoss: 0.10415005499953997
iteration: 80 HingeLoss: 0.09773049195458432
iteration: 81 HingeLoss: 0.09170661559158327
iteration: 82 HingeLoss: 0.0860540367193754
iteration: 83 HingeLoss: 0.08074986943885498
iteration: 84 HingeLoss: 0.07577263848360533
iteration: 85 HingeLoss: 0.07110219227183627
iteration: 86 HingeLoss: 0.066719621317595
iteration: 87 HingeLoss: 0.06260718167091635
iteration: 88 HingeLoss: 0.05874822307694135
iteration: 89 HingeLoss: 0.055127121563137975
iteration: 90 HingeLoss: 0.05172921618168553
iteration: 91 HingeLoss: 0.048540749650909945
iteration: 92 HingeLoss: 0.045548812655439315
iteration: 93 HingeLoss: 0.04274129157956701
iteration: 94 HingeLoss: 0.040106819462206365
iteration: 95 HingeLoss: 0.03763472997486594
iteration: 96 HingeLoss: 0.035315014236313516
iteration: 97 HingeLoss: 0.03313828028908205
iteration: 98 HingeLoss: 0.03109571507374814
iteration: 99 HingeLoss: 0.02917904874702574
[-2.23982546e-03 -7.91278410e-04 -6.39450738e-04 ... 1.13820391e-03
 1.16603344e-03 9.08473754e-05]

```

## CROSS VALIDATION 4

```

iteration: 0 HingeLoss: 180.2851428389174
iteration: 1 HingeLoss: 7.932315309471447
iteration: 2 HingeLoss: 7.443386156031789
iteration: 3 HingeLoss: 6.984593439150292
iteration: 4 HingeLoss: 6.554079620158959
iteration: 5 HingeLoss: 6.150101654679678
iteration: 6 HingeLoss: 5.771023935466982
iteration: 7 HingeLoss: 5.415311670237337
iteration: 8 HingeLoss: 5.08152466767333
iteration: 9 HingeLoss: 4.768311506443886

```

Output\_hinge\_train.txt

iteration: 10 HingeLoss: 4.474404063632267  
iteration: 11 HingeLoss: 4.198612380418851  
iteration: 12 HingeLoss: 3.939819844231046  
iteration: 13 HingeLoss: 3.696978667854131  
iteration: 14 HingeLoss: 3.469105647198974  
iteration: 15 HingeLoss: 3.2552781805509343  
iteration: 16 HingeLoss: 3.05463053318284  
iteration: 17 HingeLoss: 2.866350332208386  
iteration: 18 HingeLoss: 2.689675277484483  
iteration: 19 HingeLoss: 2.5238900552457944  
iteration: 20 HingeLoss: 2.36832344197556  
iteration: 21 HingeLoss: 2.2223455867869504  
iteration: 22 HingeLoss: 2.0853654613120205  
iteration: 23 HingeLoss: 1.9568284667734703  
iteration: 24 HingeLoss: 1.8441671871015077  
iteration: 25 HingeLoss: 3.2333157190772694  
iteration: 26 HingeLoss: 3.034021785886795  
iteration: 27 HingeLoss: 2.8470118593499776  
iteration: 28 HingeLoss: 2.6715287823519454  
iteration: 29 HingeLoss: 2.5068620671514807  
iteration: 30 HingeLoss: 2.352345018791228  
iteration: 31 HingeLoss: 2.2073520358140746  
iteration: 32 HingeLoss: 2.071296077356998  
iteration: 33 HingeLoss: 1.9436262863672453  
iteration: 34 HingeLoss: 1.823825759317857  
iteration: 35 HingeLoss: 1.7114094533926532  
iteration: 36 HingeLoss: 1.6059222226673706  
iteration: 37 HingeLoss: 1.5069369753359683  
iteration: 38 HingeLoss: 1.4140529445211338  
iteration: 39 HingeLoss: 1.3268940656679373  
iteration: 40 HingeLoss: 1.2451074539511162  
iteration: 41 HingeLoss: 1.1683619755313626  
iteration: 42 HingeLoss: 1.0963469068759912  
iteration: 43 HingeLoss: 1.028770676715924  
iteration: 44 HingeLoss: 0.9653596855454558  
iteration: 45 HingeLoss: 0.9058571978852716  
iteration: 46 HingeLoss: 0.8500223028237464  
iteration: 47 HingeLoss: 0.7976289386280235  
iteration: 48 HingeLoss: 0.7484649774757581  
iteration: 49 HingeLoss: 0.7023313666018305  
iteration: 50 HingeLoss: 0.6590413223827444  
iteration: 51 HingeLoss: 0.6184195740957593  
iteration: 52 HingeLoss: 0.580301654290917  
iteration: 53 HingeLoss: 0.5445332329028618  
iteration: 54 HingeLoss: 0.5109694924064325  
iteration: 55 HingeLoss: 0.47947454148618013  
iteration: 56 HingeLoss: 0.44992086484591953  
iteration: 57 HingeLoss: 0.42218880693071137  
iteration: 58 HingeLoss: 0.3961660874710022  
iteration: 59 HingeLoss: 0.3717473468874781  
iteration: 60 HingeLoss: 0.3488337197160885  
iteration: 61 HingeLoss: 0.32733243432614106

# Output\_hinge\_train.txt

```

iteration: 62 HingeLoss: 0.3071564373108272
iteration: 63 HingeLoss: 0.28822404102942795
iteration: 64 HingeLoss: 0.27045859287418234
iteration: 65 HingeLoss: 0.25378816492276673
iteration: 66 HingeLoss: 0.2381452627198585
iteration: 67 HingeLoss: 0.2234665520087176
iteration: 68 HingeLoss: 0.20969260230638503
iteration: 69 HingeLoss: 0.19676764628430132
iteration: 70 HingeLoss: 0.18463935398013306
iteration: 71 HingeLoss: 0.17325862092664993
iteration: 72 HingeLoss: 0.162579369339835
iteration: 73 HingeLoss: 0.1525583615612907
iteration: 74 HingeLoss: 0.1431550249996137
iteration: 75 HingeLoss: 0.13433128786196843
iteration: 76 HingeLoss: 0.12605142501077937
iteration: 77 HingeLoss: 0.11828191332145019
iteration: 78 HingeLoss: 0.11099129595549312
iteration: 79 HingeLoss: 0.10415005499953997
iteration: 80 HingeLoss: 0.09773049195458432
iteration: 81 HingeLoss: 0.09170661559158327
iteration: 82 HingeLoss: 0.0860540367193754
iteration: 83 HingeLoss: 0.08074986943885498
iteration: 84 HingeLoss: 0.07577263848360533
iteration: 85 HingeLoss: 0.07110219227183627
iteration: 86 HingeLoss: 0.066719621317595
iteration: 87 HingeLoss: 0.06260718167091635
iteration: 88 HingeLoss: 0.05874822307694135
iteration: 89 HingeLoss: 0.055127121563137975
iteration: 90 HingeLoss: 0.05172921618168553
iteration: 91 HingeLoss: 0.048540749650909945
iteration: 92 HingeLoss: 0.045548812655439315
iteration: 93 HingeLoss: 0.04274129157956701
iteration: 94 HingeLoss: 0.040106819462206365
iteration: 95 HingeLoss: 0.03763472997486594
iteration: 96 HingeLoss: 0.035315014236313516
iteration: 97 HingeLoss: 0.03313828028908205
iteration: 98 HingeLoss: 0.03109571507374814
iteration: 99 HingeLoss: 0.02917904874702574
[-2.23982546e-03 -7.91278410e-04 -6.39450738e-04 ... 1.13820391e-03
 1.16603344e-03 9.08473754e-05]

```

## CROSS VALIDATION 5

```

iteration: 0 HingeLoss: 161.73258169926896
iteration: 1 HingeLoss: 7.795238207425628
iteration: 2 HingeLoss: 7.314758162328797
iteration: 3 HingeLoss: 6.863893770736483
iteration: 4 HingeLoss: 6.440819593816307
iteration: 5 HingeLoss: 6.043822708467832
iteration: 6 HingeLoss: 5.671295772118971
iteration: 7 HingeLoss: 5.321730514991941
iteration: 8 HingeLoss: 4.993711633490575
iteration: 9 HingeLoss: 4.685911059984751
iteration: 10 HingeLoss: 4.397082585791818

```

Output\_hinge\_train.txt

iteration: 11 HingeLoss: 4.126056815584668  
iteration: 12 HingeLoss: 3.871736432798199  
iteration: 13 HingeLoss: 3.6330917568649053  
iteration: 14 HingeLoss: 3.4091565742919716  
iteration: 15 HingeLoss: 3.199024226700901  
iteration: 16 HingeLoss: 3.0018439399911374  
iteration: 17 HingeLoss: 2.816817379765352  
iteration: 18 HingeLoss: 2.6431954190701754  
iteration: 19 HingeLoss: 2.480275105365742  
iteration: 20 HingeLoss: 2.327396814444055  
iteration: 21 HingeLoss: 2.183941579773092  
iteration: 22 HingeLoss: 2.049328586453834  
iteration: 23 HingeLoss: 1.9230128196438363  
iteration: 24 HingeLoss: 1.8044828579264265  
iteration: 25 HingeLoss: 1.693258802691394  
iteration: 26 HingeLoss: 1.5888903351437613  
iteration: 27 HingeLoss: 1.4909548930739411  
iteration: 28 HingeLoss: 1.399055960007458  
iteration: 29 HingeLoss: 1.312821459807448  
iteration: 30 HingeLoss: 1.2319022502300563  
iteration: 31 HingeLoss: 1.1559707093335143  
iteration: 32 HingeLoss: 1.0847194090176253  
iteration: 33 HingeLoss: 1.0178598703231283  
iteration: 34 HingeLoss: 0.9551213954514768  
iteration: 35 HingeLoss: 0.8962499717761473  
iteration: 36 HingeLoss: 0.8410072434081003  
iteration: 37 HingeLoss: 0.7891695461515167  
iteration: 38 HingeLoss: 0.7405270019425761  
iteration: 39 HingeLoss: 0.6948826691048893  
iteration: 40 HingeLoss: 0.6520517449811754  
iteration: 41 HingeLoss: 0.6118608177128366  
iteration: 42 HingeLoss: 0.5741471641380687  
iteration: 43 HingeLoss: 0.5387580909658736  
iteration: 44 HingeLoss: 0.5055503165585469  
iteration: 45 HingeLoss: 0.47438939081962883  
iteration: 46 HingeLoss: 0.4451491508385921  
iteration: 47 HingeLoss: 0.417711210088302  
iteration: 48 HingeLoss: 0.3919644791071382  
iteration: 49 HingeLoss: 0.367804715725135  
iteration: 50 HingeLoss: 0.3451341030131214  
iteration: 51 HingeLoss: 0.32386085324607383  
iteration: 52 HingeLoss: 0.30389883627723496  
iteration: 53 HingeLoss: 0.28516723081837103  
iteration: 54 HingeLoss: 0.2675901972142884  
iteration: 55 HingeLoss: 0.25109657038675726  
iteration: 56 HingeLoss: 0.23561957170464365  
iteration: 57 HingeLoss: 0.22109653861368572  
iteration: 58 HingeLoss: 0.20746867093125093  
iteration: 59 HingeLoss: 0.19468079277888498  
iteration: 60 HingeLoss: 0.18268112918877427  
iteration: 61 HingeLoss: 0.1714210964796585  
iteration: 62 HingeLoss: 0.16085510555347546

# Output\_hinge\_train.txt

```

iteration: 63 HingeLoss: 0.1509403773163364
iteration: 64 HingeLoss: 0.14163676947651432
iteration: 65 HingeLoss: 0.1329066140181964
iteration: 66 HingeLoss: 0.12471456469296877
iteration: 67 HingeLoss: 0.11702745391156544
iteration: 68 HingeLoss: 0.10981415845647179
iteration: 69 HingeLoss: 0.10304547347168526
iteration: 70 HingeLoss: 0.09669399421944953
iteration: 71 HingeLoss: 0.09073400512522317
iteration: 72 HingeLoss: 0.08514137566165472
iteration: 73 HingeLoss: 0.07989346265002296
iteration: 74 HingeLoss: 0.07496901858358535
iteration: 75 HingeLoss: 0.0703481056016584
iteration: 76 HingeLoss: 0.06601201476613229
iteration: 77 HingeLoss: 0.06194319031359021
iteration: 78 HingeLoss: 0.058125158576347875
iteration: 79 HingeLoss: 0.054542461284631985
iteration: 80 HingeLoss: 0.05118059297985482
iteration: 81 HingeLoss: 0.0480259422855864
iteration: 82 HingeLoss: 0.04506573679844491
iteration: 83 HingeLoss: 0.04228799137578265
iteration: 84 HingeLoss: 0.03968145961079627
iteration: 85 HingeLoss: 0.037235588298596835
iteration: 86 HingeLoss: 0.0349404747088833
iteration: 87 HingeLoss: 0.03278682649222756
iteration: 88 HingeLoss: 0.030765924057641156
iteration: 89 HingeLoss: 0.028869585269099773
iteration: 90 HingeLoss: 0.0270901323180905
iteration: 91 HingeLoss: 0.0254203606380569
iteration: 92 HingeLoss: 0.023853509734884194
iteration: 93 HingeLoss: 0.0223832358153243
iteration: 94 HingeLoss: 0.021003586102539988
iteration: 95 HingeLoss: 0.019708974734778305
iteration: 96 HingeLoss: 0.01849416014959246
iteration: 97 HingeLoss: 0.01735422386204715
iteration: 98 HingeLoss: 0.016284550550984787
iteration: 99 HingeLoss: 0.015280809372727355
[-2.47828082e-04  1.32083593e-04 -5.37218753e-04 ...  1.30754411e-04
 4.82883477e-05  2.08821910e-04]

```

## CROSS VALIDATION 6

```

iteration: 0 HingeLoss: 180.19608618479018
iteration: 1 HingeLoss: 7.932741944106947
iteration: 2 HingeLoss: 7.443786493917471
iteration: 3 HingeLoss: 6.984969101155614
iteration: 4 HingeLoss: 6.5544321272468276
iteration: 5 HingeLoss: 6.150432434064428
iteration: 6 HingeLoss: 5.771334326392846
iteration: 7 HingeLoss: 5.415602929400694
iteration: 8 HingeLoss: 5.08179797431077
iteration: 9 HingeLoss: 4.768567967106646
iteration: 10 HingeLoss: 4.47464471666638
iteration: 11 HingeLoss: 4.198838200169154

```

# Output\_hinge\_train.txt

```

iteration: 12 HingeLoss: 3.9400317449860704
iteration: 13 HingeLoss: 3.6971775075478224
iteration: 14 HingeLoss: 3.469292230884261
iteration: 15 HingeLoss: 3.2554532636591853
iteration: 16 HingeLoss: 3.0547948245824217
iteration: 17 HingeLoss: 2.8665044970746942
iteration: 18 HingeLoss: 2.689819939993076
iteration: 19 HingeLoss: 2.5240258010995267
iteration: 20 HingeLoss: 2.368450820775946
iteration: 21 HingeLoss: 2.22246511425937
iteration: 22 HingeLoss: 2.085477621393757
iteration: 23 HingeLoss: 1.95693371357306
iteration: 24 HingeLoss: 1.8420154974094545
iteration: 25 HingeLoss: 3.233408314781083
iteration: 26 HingeLoss: 3.034108674210441
iteration: 27 HingeLoss: 2.8470933920828707
iteration: 28 HingeLoss: 2.671605289600031
iteration: 29 HingeLoss: 2.5069338586737557
iteration: 30 HingeLoss: 2.3524123852538774
iteration: 31 HingeLoss: 2.2074152499673096
iteration: 32 HingeLoss: 2.071355395139348
iteration: 33 HingeLoss: 1.9436819479417937
iteration: 34 HingeLoss: 1.8238779900446056
iteration: 35 HingeLoss: 1.7114584647409457
iteration: 36 HingeLoss: 1.6059682130720814
iteration: 37 HingeLoss: 1.5069801310009137
iteration: 38 HingeLoss: 1.4140934401729672
iteration: 39 HingeLoss: 1.3269320652635754
iteration: 40 HingeLoss: 1.2451431113415594
iteration: 41 HingeLoss: 1.1683954350845986
iteration: 42 HingeLoss: 1.0963783040615076
iteration: 43 HingeLoss: 1.0288001386531886
iteration: 44 HingeLoss: 0.9653873315185939
iteration: 45 HingeLoss: 0.9058831398260161
iteration: 46 HingeLoss: 0.8500466457646231
iteration: 47 HingeLoss: 0.7976517811276032
iteration: 48 HingeLoss: 0.7484864120176934
iteration: 49 HingeLoss: 0.7023514799692993
iteration: 50 HingeLoss: 0.6590601960098164
iteration: 51 HingeLoss: 0.6184372843970999
iteration: 52 HingeLoss: 0.5803182729711734
iteration: 53 HingeLoss: 0.5445488272469754
iteration: 54 HingeLoss: 0.5109841255520599
iteration: 55 HingeLoss: 0.4794882726793225
iteration: 56 HingeLoss: 0.44993374968079497
iteration: 57 HingeLoss: 0.42220089757484164
iteration: 58 HingeLoss: 0.3961774328764259
iteration: 59 HingeLoss: 0.37175799298894674
iteration: 60 HingeLoss: 0.34884370961704375
iteration: 61 HingeLoss: 0.3273418084732305
iteration: 62 HingeLoss: 0.30716523365766285
iteration: 63 HingeLoss: 0.2882322951902503

```

# Output\_hinge\_train.txt

```

iteration: 64 HingeLoss: 0.2704663382680552
iteration: 65 HingeLoss: 0.25379543290888124
iteration: 66 HingeLoss: 0.23815208272449984
iteration: 67 HingeLoss: 0.22347295164440423
iteration: 68 HingeLoss: 0.20969860748366498
iteration: 69 HingeLoss: 0.19677328131665775
iteration: 70 HingeLoss: 0.18464464168242356
iteration: 71 HingeLoss: 0.17326358270747816
iteration: 72 HingeLoss: 0.16258402528822904
iteration: 73 HingeLoss: 0.1525627305280384
iteration: 74 HingeLoss: 0.14315912467358483
iteration: 75 HingeLoss: 0.13433513484173304
iteration: 76 HingeLoss: 0.12605503487181044
iteration: 77 HingeLoss: 0.11828530067918568
iteration: 78 HingeLoss: 0.11099447452450989
iteration: 79 HingeLoss: 0.10415303764908082
iteration: 80 HingeLoss: 0.09773329076066231
iteration: 81 HingeLoss: 0.0917092418858746
iteration: 82 HingeLoss: 0.08605650113509859
iteration: 83 HingeLoss: 0.08075218195382201
iteration: 84 HingeLoss: 0.07577480846061957
iteration: 85 HingeLoss: 0.07110422849659996
iteration: 86 HingeLoss: 0.06672153203428058
iteration: 87 HingeLoss: 0.06260897461554481
iteration: 88 HingeLoss: 0.05874990550870376
iteration: 89 HingeLoss: 0.05512870029378594
iteration: 90 HingeLoss: 0.051730697603110574
iteration: 91 HingeLoss: 0.0485421397610223
iteration: 92 HingeLoss: 0.04555011708245235
iteration: 93 HingeLoss: 0.0427425156047843
iteration: 94 HingeLoss: 0.04010796804140445
iteration: 95 HingeLoss: 0.037635807758358994
iteration: 96 HingeLoss: 0.035316025587781325
iteration: 97 HingeLoss: 0.03313922930323753
iteration: 98 HingeLoss: 0.031096605592915764
iteration: 99 HingeLoss: 0.029179884376698207
[-2.23993323e-03 -7.91281063e-04 -6.39461212e-04 ... 1.13830972e-03
 1.16616540e-03 9.08223579e-05]

```

## CROSS VALIDATION 7

```

iteration: 0 HingeLoss: 180.19608618479018
iteration: 1 HingeLoss: 7.932741944106947
iteration: 2 HingeLoss: 7.443786493917471
iteration: 3 HingeLoss: 6.984969101155614
iteration: 4 HingeLoss: 6.5544321272468276
iteration: 5 HingeLoss: 6.150432434064428
iteration: 6 HingeLoss: 5.771334326392846
iteration: 7 HingeLoss: 5.415602929400694
iteration: 8 HingeLoss: 5.08179797431077
iteration: 9 HingeLoss: 4.768567967106646
iteration: 10 HingeLoss: 4.47464471666638
iteration: 11 HingeLoss: 4.198838200169154
iteration: 12 HingeLoss: 3.9400317449860704

```

# Output\_hinge\_train.txt

```

iteration: 13 HingeLoss: 3.6971775075478224
iteration: 14 HingeLoss: 3.469292230884261
iteration: 15 HingeLoss: 3.2554532636591853
iteration: 16 HingeLoss: 3.0547948245824217
iteration: 17 HingeLoss: 2.8665044970746942
iteration: 18 HingeLoss: 2.689819939993076
iteration: 19 HingeLoss: 2.5240258010995267
iteration: 20 HingeLoss: 2.368450820775946
iteration: 21 HingeLoss: 2.22246511425937
iteration: 22 HingeLoss: 2.085477621393757
iteration: 23 HingeLoss: 1.95693371357306
iteration: 24 HingeLoss: 1.8420154974094545
iteration: 25 HingeLoss: 3.233408314781083
iteration: 26 HingeLoss: 3.034108674210441
iteration: 27 HingeLoss: 2.8470933920828707
iteration: 28 HingeLoss: 2.671605289600031
iteration: 29 HingeLoss: 2.5069338586737557
iteration: 30 HingeLoss: 2.3524123852538774
iteration: 31 HingeLoss: 2.2074152499673096
iteration: 32 HingeLoss: 2.071355395139348
iteration: 33 HingeLoss: 1.9436819479417937
iteration: 34 HingeLoss: 1.8238779900446056
iteration: 35 HingeLoss: 1.7114584647409457
iteration: 36 HingeLoss: 1.6059682130720814
iteration: 37 HingeLoss: 1.5069801310009137
iteration: 38 HingeLoss: 1.4140934401729672
iteration: 39 HingeLoss: 1.3269320652635754
iteration: 40 HingeLoss: 1.2451431113415594
iteration: 41 HingeLoss: 1.1683954350845986
iteration: 42 HingeLoss: 1.0963783040615076
iteration: 43 HingeLoss: 1.0288001386531886
iteration: 44 HingeLoss: 0.9653873315185939
iteration: 45 HingeLoss: 0.9058831398260161
iteration: 46 HingeLoss: 0.8500466457646231
iteration: 47 HingeLoss: 0.7976517811276032
iteration: 48 HingeLoss: 0.7484864120176934
iteration: 49 HingeLoss: 0.7023514799692993
iteration: 50 HingeLoss: 0.6590601960098164
iteration: 51 HingeLoss: 0.6184372843970999
iteration: 52 HingeLoss: 0.5803182729711734
iteration: 53 HingeLoss: 0.5445488272469754
iteration: 54 HingeLoss: 0.5109841255520599
iteration: 55 HingeLoss: 0.4794882726793225
iteration: 56 HingeLoss: 0.44993374968079497
iteration: 57 HingeLoss: 0.42220089757484164
iteration: 58 HingeLoss: 0.3961774328764259
iteration: 59 HingeLoss: 0.37175799298894674
iteration: 60 HingeLoss: 0.34884370961704375
iteration: 61 HingeLoss: 0.3273418084732305
iteration: 62 HingeLoss: 0.30716523365766285
iteration: 63 HingeLoss: 0.2882322951902503
iteration: 64 HingeLoss: 0.2704663382680552

```



# Output\_hinge\_train.txt

```
iteration: 65 HingeLoss: 0.25379543290888124
iteration: 66 HingeLoss: 0.23815208272449984
iteration: 67 HingeLoss: 0.22347295164440423
iteration: 68 HingeLoss: 0.20969860748366498
iteration: 69 HingeLoss: 0.19677328131665775
iteration: 70 HingeLoss: 0.18464464168242356
iteration: 71 HingeLoss: 0.17326358270747816
iteration: 72 HingeLoss: 0.16258402528822904
iteration: 73 HingeLoss: 0.1525627305280384
iteration: 74 HingeLoss: 0.14315912467358483
iteration: 75 HingeLoss: 0.13433513484173304
iteration: 76 HingeLoss: 0.12605503487181044
iteration: 77 HingeLoss: 0.11828530067918568
iteration: 78 HingeLoss: 0.11099447452450989
iteration: 79 HingeLoss: 0.10415303764908082
iteration: 80 HingeLoss: 0.09773329076066231
iteration: 81 HingeLoss: 0.0917092418858746
iteration: 82 HingeLoss: 0.08605650113509859
iteration: 83 HingeLoss: 0.08075218195382201
iteration: 84 HingeLoss: 0.07577480846061957
iteration: 85 HingeLoss: 0.07110422849659996
iteration: 86 HingeLoss: 0.06672153203428058
iteration: 87 HingeLoss: 0.06260897461554481
iteration: 88 HingeLoss: 0.05874990550870376
iteration: 89 HingeLoss: 0.05512870029378594
iteration: 90 HingeLoss: 0.051730697603110574
iteration: 91 HingeLoss: 0.0485421397610223
iteration: 92 HingeLoss: 0.04555011708245235
iteration: 93 HingeLoss: 0.0427425156047843
iteration: 94 HingeLoss: 0.04010796804140445
iteration: 95 HingeLoss: 0.037635807758358994
iteration: 96 HingeLoss: 0.035316025587781325
iteration: 97 HingeLoss: 0.03313922930323753
iteration: 98 HingeLoss: 0.031096605592915764
iteration: 99 HingeLoss: 0.029179884376698207
[-2.23993323e-03 -7.91281063e-04 -6.39461212e-04 ... 1.13830972e-03
 1.16616540e-03 9.08223579e-05]
```

## CROSS VALIDATION 8

```
iteration: 0 HingeLoss: 173.46872279311071
iteration: 1 HingeLoss: 7.23409408180032
iteration: 2 HingeLoss: 6.788201633337734
iteration: 3 HingeLoss: 6.369792940732864
iteration: 4 HingeLoss: 5.977173970281732
iteration: 5 HingeLoss: 5.6087551045109825
iteration: 6 HingeLoss: 5.263044706208415
iteration: 7 HingeLoss: 4.938643079151428
iteration: 8 HingeLoss: 4.634236801081902
iteration: 9 HingeLoss: 4.348593405983069
iteration: 10 HingeLoss: 4.080556394128295
iteration: 11 HingeLoss: 3.829040549698648
iteration: 12 HingeLoss: 3.59302754701141
iteration: 13 HingeLoss: 3.371561827570321
```

Output\_hinge\_train.txt

iteration: 14 HingeLoss: 3.1637467312446463  
iteration: 15 HingeLoss: 2.9687408659132535  
iteration: 16 HingeLoss: 2.785754700875217  
iteration: 17 HingeLoss: 2.614047370234545  
iteration: 18 HingeLoss: 2.4529236733167155  
iteration: 19 HingeLoss: 2.3017312599724256  
iteration: 20 HingeLoss: 2.159857989372583  
iteration: 21 HingeLoss: 2.026729451600905  
iteration: 22 HingeLoss: 1.9018066420097062  
iteration: 23 HingeLoss: 1.7845837789228771  
iteration: 24 HingeLoss: 1.6745862558505065  
iteration: 25 HingeLoss: 1.5713687199241335  
iteration: 26 HingeLoss: 1.4745132687727271  
iteration: 27 HingeLoss: 1.38362775853894  
iteration: 28 HingeLoss: 1.2983442161852599  
iteration: 29 HingeLoss: 1.2183173496618414  
iteration: 30 HingeLoss: 1.1432231499040773  
iteration: 31 HingeLoss: 1.0727575789997277  
iteration: 32 HingeLoss: 1.0066353392143224  
iteration: 33 HingeLoss: 0.9445887178909326  
iteration: 34 HingeLoss: 0.886366503547584  
iteration: 35 HingeLoss: 0.8317329687838649  
iteration: 36 HingeLoss: 0.7804669158787584  
iteration: 37 HingeLoss: 0.7323607812155751  
iteration: 38 HingeLoss: 0.68721979490801  
iteration: 39 HingeLoss: 0.6448611922248625  
iteration: 40 HingeLoss: 0.605113473620671  
iteration: 41 HingeLoss: 0.5678157103763101  
iteration: 42 HingeLoss: 0.5328168930382575  
iteration: 43 HingeLoss: 0.4999753200185253  
iteration: 44 HingeLoss: 0.4691580238798437  
iteration: 45 HingeLoss: 0.4402402329832687  
iteration: 46 HingeLoss: 0.4131048663185602  
iteration: 47 HingeLoss: 0.3876420594720185  
iteration: 48 HingeLoss: 0.3637487198125428  
iteration: 49 HingeLoss: 0.34132810909496947  
iteration: 50 HingeLoss: 0.3202894517907526  
iteration: 51 HingeLoss: 0.3005475675602151  
iteration: 52 HingeLoss: 0.2820225263783415  
iteration: 53 HingeLoss: 0.26463932491780034  
iteration: 54 HingeLoss: 0.24832758287895237  
iteration: 55 HingeLoss: 0.23302125803735796  
iteration: 56 HingeLoss: 0.2186583788550828  
iteration: 57 HingeLoss: 0.20518079357321026  
iteration: 58 HingeLoss: 0.19253393476969755  
iteration: 59 HingeLoss: 0.1806665984293288  
iteration: 60 HingeLoss: 0.1695307366312732  
iteration: 61 HingeLoss: 0.159081263014893  
iteration: 62 HingeLoss: 0.1492758702361778  
iteration: 63 HingeLoss: 0.1400748586757326  
iteration: 64 HingeLoss: 0.13144097570480104  
iteration: 65 HingeLoss: 0.12333926485854946

# Output\_hinge\_train.txt

```

iteration: 66 HingeLoss: 0.11573692430595507
iteration: 67 HingeLoss: 0.10860317404327278
iteration: 68 HingeLoss: 0.10190913127338504
iteration: 69 HingeLoss: 0.09562769346647222
iteration: 70 HingeLoss: 0.08973342862854751
iteration: 71 HingeLoss: 0.08420247233357929
iteration: 72 HingeLoss: 0.07901243110231022
iteration: 73 HingeLoss: 0.07414229173657744
iteration: 74 HingeLoss: 0.06957233624205027
iteration: 75 HingeLoss: 0.0652840619949299
iteration: 76 HingeLoss: 0.06126010682938442
iteration: 77 HingeLoss: 0.05748417874241708
iteration: 78 HingeLoss: 0.053940989931560684
iteration: 79 HingeLoss: 0.05061619489833193
iteration: 80 HingeLoss: 0.047496332366842725
iteration: 81 HingeLoss: 0.04456877078241087
iteration: 82 HingeLoss: 0.041821657169507566
iteration: 83 HingeLoss: 0.03924386914197977
iteration: 84 HingeLoss: 0.036824969871249245
iteration: 85 HingeLoss: 0.03455516583016523
iteration: 86 HingeLoss: 0.03242526714142596
iteration: 87 HingeLoss: 0.030426650370029795
iteration: 88 HingeLoss: 0.028551223609111685
iteration: 89 HingeLoss: 0.02679139371780602
iteration: 90 HingeLoss: 0.02514003557849015
iteration: 91 HingeLoss: 0.02359046324893872
iteration: 92 HingeLoss: 0.02213640289259094
iteration: 93 HingeLoss: 0.02077196737733217
iteration: 94 HingeLoss: 0.01949163243994653
iteration: 95 HingeLoss: 0.0182902143197363
iteration: 96 HingeLoss: 0.017162848770752023
iteration: 97 HingeLoss: 0.01610497136765925
iteration: 98 HingeLoss: 0.015112299025504936
iteration: 99 HingeLoss: 0.014180812658561779
[-0.00029124 -0.00026776 -0.00036437 ... 0.00012043 0.00010874
0.00012624]

```

## CROSS VALIDATION 9

```

iteration: 0 HingeLoss: 160.69101642723192
iteration: 1 HingeLoss: 7.933248828853556
iteration: 2 HingeLoss: 7.444262135487223
iteration: 3 HingeLoss: 6.985415425304039
iteration: 4 HingeLoss: 6.554850941030425
iteration: 5 HingeLoss: 6.150825433157028
iteration: 6 HingeLoss: 5.771703101950932
iteration: 7 HingeLoss: 5.415948974505643
iteration: 8 HingeLoss: 5.082122690013951
iteration: 9 HingeLoss: 4.768872668101927
iteration: 10 HingeLoss: 4.474930636613019
iteration: 11 HingeLoss: 4.199106496686565
iteration: 12 HingeLoss: 3.940283504340748
iteration: 13 HingeLoss: 3.697413749051362
iteration: 14 HingeLoss: 3.4695139110203006

```

Output\_hinge\_train.txt

iteration: 15 HingeLoss: 3.2556612799559788  
iteration: 16 HingeLoss: 3.054990019246699  
iteration: 17 HingeLoss: 2.8666876604015585  
iteration: 18 HingeLoss: 2.689991813565707  
iteration: 19 HingeLoss: 2.5241870807916715  
iteration: 20 HingeLoss: 2.3686021595693423  
iteration: 21 HingeLoss: 2.2226071248875  
iteration: 22 HingeLoss: 2.0856108788226657  
iteration: 23 HingeLoss: 1.957058757329243  
iteration: 24 HingeLoss: 1.8364302845414644  
iteration: 25 HingeLoss: 3.2335416165658293  
iteration: 26 HingeLoss: 3.0342337595884703  
iteration: 27 HingeLoss: 2.8472107674940625  
iteration: 28 HingeLoss: 2.671715430268503  
iteration: 29 HingeLoss: 2.5070372105319385  
iteration: 30 HingeLoss: 2.3525093667479804  
iteration: 31 HingeLoss: 2.207506253751505  
iteration: 32 HingeLoss: 2.0714407896655342  
iteration: 33 HingeLoss: 1.9437620789513694  
iteration: 34 HingeLoss: 1.8239531819682855  
iteration: 35 HingeLoss: 1.7115290220123016  
iteration: 36 HingeLoss: 1.6060344213601183  
iteration: 37 HingeLoss: 1.5070422583666778  
iteration: 38 HingeLoss: 1.4141517381548547  
iteration: 39 HingeLoss: 1.326986769895752  
iteration: 40 HingeLoss: 1.2451944441096017  
iteration: 41 HingeLoss: 1.1684436038222348  
iteration: 42 HingeLoss: 1.0964235037920893  
iteration: 43 HingeLoss: 1.028842552379288  
iteration: 44 HingeLoss: 0.9654271309629363  
iteration: 45 HingeLoss: 0.9059204861267469  
iteration: 46 HingeLoss: 0.8500816901277118  
iteration: 47 HingeLoss: 0.7976846654390414  
iteration: 48 HingeLoss: 0.7485172694179546  
iteration: 49 HingeLoss: 0.7023804353923958  
iteration: 50 HingeLoss: 0.6590873666891212  
iteration: 51 HingeLoss: 0.6184627803399987  
iteration: 52 HingeLoss: 0.5803421974044574  
iteration: 53 HingeLoss: 0.5445712770347803  
iteration: 54 HingeLoss: 0.5110051915880441  
iteration: 55 HingeLoss: 0.47950804025467636  
iteration: 56 HingeLoss: 0.4499522988295601  
iteration: 57 HingeLoss: 0.4222183033979508  
iteration: 58 HingeLoss: 0.39619376584576865  
iteration: 59 HingeLoss: 0.3717733192326915  
iteration: 60 HingeLoss: 0.34885809118737515  
iteration: 61 HingeLoss: 0.3273553035975832  
iteration: 62 HingeLoss: 0.30717789697447034  
iteration: 63 HingeLoss: 0.28824417797016233  
iteration: 64 HingeLoss: 0.27047748862151966  
iteration: 65 HingeLoss: 0.25380589598093195  
iteration: 66 HingeLoss: 0.2381619008775377

# Output\_hinge\_train.txt

```

iteration: 67 HingeLoss: 0.22348216462971135
iteration: 68 HingeLoss: 0.20970725260234926
iteration: 69 HingeLoss: 0.19678139357067445
iteration: 70 HingeLoss: 0.1846522539162906
iteration: 71 HingeLoss: 0.17327072574125482
iteration: 72 HingeLoss: 0.162590728042299
iteration: 73 HingeLoss: 0.1525690201402015
iteration: 74 HingeLoss: 0.143165026608931
iteration: 75 HingeLoss: 0.13434067299574426
iteration: 76 HingeLoss: 0.1260602316671078
iteration: 77 HingeLoss: 0.1182901771563128
iteration: 78 HingeLoss: 0.11099905042712115
iteration: 79 HingeLoss: 0.10415733150387851
iteration: 80 HingeLoss: 0.09773731995240642
iteration: 81 HingeLoss: 0.09171302272776984
iteration: 82 HingeLoss: 0.08606004893484218
iteration: 83 HingeLoss: 0.08075551107558107
iteration: 84 HingeLoss: 0.07577793238318765
iteration: 85 HingeLoss: 0.07110715986796999
iteration: 86 HingeLoss: 0.06672428272285287
iteration: 87 HingeLoss: 0.0626115557581797
iteration: 88 HingeLoss: 0.058752327555811786
iteration: 89 HingeLoss: 0.05513097305163909
iteration: 90 HingeLoss: 0.05173283027354536
iteration: 91 HingeLoss: 0.0485441409786959
iteration: 92 HingeLoss: 0.04555199494980198
iteration: 93 HingeLoss: 0.042744277724832226
iteration: 94 HingeLoss: 0.040109621548540565
iteration: 95 HingeLoss: 0.03763735934722626
iteration: 96 HingeLoss: 0.035317481540380766
iteration: 97 HingeLoss: 0.03314059551436249
iteration: 98 HingeLoss: 0.031097887594018457
iteration: 99 HingeLoss: 0.02918108735828525
[-2.23999724e-03 -7.91299681e-04 -6.39571688e-04 ... 1.13831264e-03
 1.16624990e-03 9.08474205e-05]

```

## CROSS VALIDATION 10

```

iteration: 0 HingeLoss: 81.52396842089063
iteration: 1 HingeLoss: 7.922046912863006
iteration: 2 HingeLoss: 7.433750679102541
iteration: 3 HingeLoss: 6.97555187022825
iteration: 4 HingeLoss: 6.5455953521593315
iteration: 5 HingeLoss: 6.142140336891781
iteration: 6 HingeLoss: 5.763553334476696
iteration: 7 HingeLoss: 5.4083015394219425
iteration: 8 HingeLoss: 5.074946624740398
iteration: 9 HingeLoss: 4.762138918518353
iteration: 10 HingeLoss: 4.468611939426497
iteration: 11 HingeLoss: 4.193177269049061
iteration: 12 HingeLoss: 3.9347197402704697
iteration: 13 HingeLoss: 3.692192922238453
iteration: 14 HingeLoss: 3.4646148836233626
iteration: 15 HingeLoss: 3.251064217020164

```

Output\_hinge\_train.txt

iteration: 16 HingeLoss: 3.0506763083968536  
iteration: 17 HingeLoss: 2.8626398364853145  
iteration: 18 HingeLoss: 2.6861934879413765  
iteration: 19 HingeLoss: 2.520622874974679  
iteration: 20 HingeLoss: 2.365257642968524  
iteration: 21 HingeLoss: 2.2194687563792006  
iteration: 22 HingeLoss: 2.082665951926063  
iteration: 23 HingeLoss: 1.9542953487609358  
iteration: 24 HingeLoss: 1.8338372059410413  
iteration: 25 HingeLoss: 1.7208038181259713  
iteration: 26 HingeLoss: 1.6147375409789373  
iteration: 27 HingeLoss: 1.515208938277606  
iteration: 28 HingeLoss: 1.4218150432326495  
iteration: 29 HingeLoss: 1.3341777269744997  
iteration: 30 HingeLoss: 1.2519421676027236  
iteration: 31 HingeLoss: 1.1747754135995716  
iteration: 32 HingeLoss: 1.1023650357913255  
iteration: 33 HingeLoss: 1.0344178623995448  
iteration: 34 HingeLoss: 0.9706587920607772  
iteration: 35 HingeLoss: 0.9108296800089192  
iteration: 36 HingeLoss: 0.8546882929106607  
iteration: 37 HingeLoss: 0.8020073281224065  
iteration: 38 HingeLoss: 0.7525734933978737  
iteration: 39 HingeLoss: 0.7061866433203433  
iteration: 40 HingeLoss: 0.6626589689631808  
iteration: 41 HingeLoss: 0.6218142374977652  
iteration: 42 HingeLoss: 0.5834870786701915  
iteration: 43 HingeLoss: 0.5475223152578544  
iteration: 44 HingeLoss: 0.5137743347951131  
iteration: 45 HingeLoss: 0.4821065000242918  
iteration: 46 HingeLoss: 0.45239059568509055  
iteration: 47 HingeLoss: 0.42450630940258877  
iteration: 48 HingeLoss: 0.39834074457208113  
iteration: 49 HingeLoss: 0.37378796326854424  
iteration: 50 HingeLoss: 0.3507485573300779  
iteration: 51 HingeLoss: 0.32912924587875286  
iteration: 52 HingeLoss: 0.3088424976493187  
iteration: 53 HingeLoss: 0.2898061765966788  
iteration: 54 HingeLoss: 0.2719432093472791  
iteration: 55 HingeLoss: 0.2551812731480121  
iteration: 56 HingeLoss: 0.2394525030492065  
iteration: 57 HingeLoss: 0.22469321713616883  
iteration: 58 HingeLoss: 0.21084365869680047  
iteration: 59 HingeLoss: 0.19784775428139512  
iteration: 60 HingeLoss: 0.18565288667505606  
iteration: 61 HingeLoss: 0.17420968186355792  
iteration: 62 HingeLoss: 0.16347180913012813  
iteration: 63 HingeLoss: 0.1533957934737902  
iteration: 64 HingeLoss: 0.143940839589797  
iteration: 65 HingeLoss: 0.13506866669949338  
iteration: 66 HingeLoss: 0.12674335356087502  
iteration: 67 HingeLoss: 0.11893119303233048

# Output\_hinge\_train.txt

```

iteration: 68 HingeLoss: 0.11160055560073029
iteration: 69 HingeLoss: 0.10472176132132138
iteration: 70 HingeLoss: 0.098266959650943
iteration: 71 HingeLoss: 0.09221001668804076
iteration: 72 HingeLoss: 0.0865264093629375
iteration: 73 HingeLoss: 0.08119312614996681
iteration: 74 HingeLoss: 0.07618857389947539
iteration: 75 HingeLoss: 0.07149249041248053
iteration: 76 HingeLoss: 0.06708586240401875
iteration: 77 HingeLoss: 0.06295084852303978
iteration: 78 HingeLoss: 0.05907070711717212
iteration: 79 HingeLoss: 0.055429728449897554
iteration: 80 HingeLoss: 0.05201317109569872
iteration: 81 HingeLoss: 0.04880720225565942
iteration: 82 HingeLoss: 0.04579884175187004
iteration: 83 HingeLoss: 0.04297590947388538
iteration: 84 HingeLoss: 0.04032697606445864
iteration: 85 HingeLoss: 0.03784131664488987
iteration: 86 HingeLoss: 0.035508867392634806
iteration: 87 HingeLoss: 0.03332018479536688
iteration: 88 HingeLoss: 0.03126640741652272
iteration: 89 HingeLoss: 0.029339220017528776
iteration: 90 HingeLoss: 0.027530819891449315
iteration: 91 HingeLoss: 0.025833885271748357
iteration: 92 HingeLoss: 0.02424154568826113
iteration: 93 HingeLoss: 0.022747354150353123
iteration: 94 HingeLoss: 0.02134526104464356
iteration: 95 HingeLoss: 0.020029589641611358
iteration: 96 HingeLoss: 0.01879501311191598
iteration: 97 HingeLoss: 0.017636532959377924
iteration: 98 HingeLoss: 0.01654945878329933
iteration: 99 HingeLoss: 0.015529389288187161
[-8.12036992e-04 1.14969965e-04 -1.04359880e-04 ... 7.37183868e-04
 3.04889475e-04 8.29004169e-05]

```

## CROSS VALIDATION 11

```

iteration: 0 HingeLoss: 180.25748737283274
iteration: 1 HingeLoss: 7.933793705869431
iteration: 2 HingeLoss: 7.44477342757264
iteration: 3 HingeLoss: 6.985895202554662
iteration: 4 HingeLoss: 6.555301145946136
iteration: 5 HingeLoss: 6.151247888506597
iteration: 6 HingeLoss: 5.772099518151985
iteration: 7 HingeLoss: 5.416320956549705
iteration: 8 HingeLoss: 5.08247174396466
iteration: 9 HingeLoss: 4.76920020719273
iteration: 10 HingeLoss: 4.475237986968988
iteration: 11 HingeLoss: 4.199394902693567
iteration: 12 HingeLoss: 3.94055413368364
iteration: 13 HingeLoss: 3.697667697441675
iteration: 14 HingeLoss: 3.4697522066325
iteration: 15 HingeLoss: 3.25588488759028
iteration: 16 HingeLoss: 3.0551998442353203

```

# Output\_hinge\_train.txt

```

iteration: 17 HingeLoss: 2.8668845522741764
iteration: 18 HingeLoss: 2.690176569489003
iteration: 19 HingeLoss: 2.524360448796857
iteration: 20 HingeLoss: 2.3687648415807536
iteration: 21 HingeLoss: 2.222759779564519
iteration: 22 HingeLoss: 2.0857541242264657
iteration: 23 HingeLoss: 1.9571931734251713
iteration: 24 HingeLoss: 1.836556415547172
iteration: 25 HingeLoss: 3.233656878485833
iteration: 26 HingeLoss: 3.0343419170363553
iteration: 27 HingeLoss: 2.8473122583726838
iteration: 28 HingeLoss: 2.6718106654894225
iteration: 29 HingeLoss: 2.5071265756790977
iteration: 30 HingeLoss: 2.352593223638843
iteration: 31 HingeLoss: 2.207584941901961
iteration: 32 HingeLoss: 2.0715146276645178
iteration: 33 HingeLoss: 1.9438313657507431
iteration: 34 HingeLoss: 1.8240181980932288
iteration: 35 HingeLoss: 1.7115900306970846
iteration: 36 HingeLoss: 1.6060916696138752
iteration: 37 HingeLoss: 1.5070959779734825
iteration: 38 HingeLoss: 1.4142021466121586
iteration: 39 HingeLoss: 1.3270340712949775
iteration: 40 HingeLoss: 1.2452388299624606
iteration: 41 HingeLoss: 1.168485253836109
iteration: 42 HingeLoss: 1.0964625865976227
iteration: 43 HingeLoss: 1.0288792262131303
iteration: 44 HingeLoss: 0.965461544308406
iteration: 45 HingeLoss: 0.9059527783149989
iteration: 46 HingeLoss: 0.8501119919018608
iteration: 47 HingeLoss: 0.797713099483504
iteration: 48 HingeLoss: 0.7485439508551718
iteration: 49 HingeLoss: 0.7024054722489318
iteration: 50 HingeLoss: 0.6591108603330396
iteration: 51 HingeLoss: 0.618484825891276
iteration: 52 HingeLoss: 0.5803628841200976
iteration: 53 HingeLoss: 0.5445906886701988
iteration: 54 HingeLoss: 0.5110234067361699
iteration: 55 HingeLoss: 0.4795251326641554
iteration: 56 HingeLoss: 0.4499683377033473
iteration: 57 HingeLoss: 0.4222333536734944
iteration: 58 HingeLoss: 0.396207888457926
iteration: 59 HingeLoss: 0.3717865713604395
iteration: 60 HingeLoss: 0.34887052648531397
iteration: 61 HingeLoss: 0.32736697241317025
iteration: 62 HingeLoss: 0.3071888465518647
iteration: 63 HingeLoss: 0.2882544526415049
iteration: 64 HingeLoss: 0.2704871299864234
iteration: 65 HingeLoss: 0.25381494307490765
iteration: 66 HingeLoss: 0.23817039033003962
iteration: 67 HingeLoss: 0.22349013081244118
iteration: 68 HingeLoss: 0.209714727768418

```



# Output\_hinge\_train.txt

```

iteration: 69 HingeLoss: 0.19678840798518768
iteration: 70 HingeLoss: 0.18465883597888436
iteration: 71 HingeLoss: 0.17327690210107874
iteration: 72 HingeLoss: 0.1625965237059123
iteration: 73 HingeLoss: 0.15257445857281807
iteration: 74 HingeLoss: 0.14317012982942462
iteration: 75 HingeLoss: 0.1343454616657972
iteration: 76 HingeLoss: 0.12606472517486525
iteration: 77 HingeLoss: 0.1182943936948806
iteration: 78 HingeLoss: 0.11100300706822495
iteration: 79 HingeLoss: 0.10416104426698326
iteration: 80 HingeLoss: 0.09774080386957516
iteration: 81 HingeLoss: 0.09171629190452478
iteration: 82 HingeLoss: 0.08606311660727455
iteration: 83 HingeLoss: 0.08075838966394057
iteration: 84 HingeLoss: 0.07578063354216942
iteration: 85 HingeLoss: 0.07110969453390109
iteration: 86 HingeLoss: 0.0667266611579712
iteration: 87 HingeLoss: 0.06261378759218306
iteration: 88 HingeLoss: 0.05875442182484614
iteration: 89 HingeLoss: 0.05513293823488369
iteration: 90 HingeLoss: 0.05173467432754303
iteration: 91 HingeLoss: 0.04854587136956685
iteration: 92 HingeLoss: 0.045553618683472574
iteration: 93 HingeLoss: 0.042745801375399926
iteration: 94 HingeLoss: 0.04011105128489113
iteration: 95 HingeLoss: 0.03763870095800994
iteration: 96 HingeLoss: 0.03531874045744903
iteration: 97 HingeLoss: 0.03314177683476038
iteration: 98 HingeLoss: 0.031098996100621216
iteration: 99 HingeLoss: 0.02918212753916292
[-2.24007402e-03 -7.91322695e-04 -6.39549107e-04 ... 1.13832946e-03
 1.16629474e-03 9.08223278e-05]

```

## CROSS VALIDATION 12

```

iteration: 0 HingeLoss: 125.41102526383014
iteration: 1 HingeLoss: 43.6979839074717
iteration: 2 HingeLoss: 25.25665805894903
iteration: 3 HingeLoss: 8.170779806571963
iteration: 4 HingeLoss: 7.667152265569019
iteration: 5 HingeLoss: 7.194567134967671
iteration: 6 HingeLoss: 6.7511110340151035
iteration: 7 HingeLoss: 6.3349885182224135
iteration: 8 HingeLoss: 5.944514810052225
iteration: 9 HingeLoss: 5.5781089776696
iteration: 10 HingeLoss: 5.234287534138518
iteration: 11 HingeLoss: 4.911658431148836
iteration: 12 HingeLoss: 4.608915422955632
iteration: 13 HingeLoss: 4.324832777712068
iteration: 14 HingeLoss: 4.058260314783113
iteration: 15 HingeLoss: 3.808118747947579
iteration: 16 HingeLoss: 3.5733953156341243
iteration: 17 HingeLoss: 3.3531396804991855

```

# Output\_hinge\_train.txt

```

iteration: 18 HingeLoss: 3.1464600817452326
iteration: 19 HingeLoss: 2.952519724601022
iteration: 20 HingeLoss: 2.7705333923457465
iteration: 21 HingeLoss: 2.5997642671600043
iteration: 22 HingeLoss: 2.4395209469319887
iteration: 23 HingeLoss: 2.289154645940702
iteration: 24 HingeLoss: 2.148056568082419
iteration: 25 HingeLoss: 2.015655442005269
iteration: 26 HingeLoss: 1.8914152081722866
iteration: 27 HingeLoss: 1.7748328484884288
iteration: 28 HingeLoss: 1.6654363497042464
iteration: 29 HingeLoss: 1.5627827923505369
iteration: 30 HingeLoss: 1.4664565574665474
iteration: 31 HingeLoss: 1.3760676438612027
iteration: 32 HingeLoss: 1.2912500890943848
iteration: 33 HingeLoss: 1.2116604877851718
iteration: 34 HingeLoss: 1.1369766012480689
iteration: 35 HingeLoss: 1.0668960528279687
iteration: 36 HingeLoss: 1.0011351036515732
iteration: 37 HingeLoss: 0.9394275038386118
iteration: 38 HingeLoss: 0.8815234145216745
iteration: 39 HingeLoss: 0.827188396310196
iteration: 40 HingeLoss: 0.7762024601031289
iteration: 41 HingeLoss: 0.7283591764072754
iteration: 42 HingeLoss: 0.6834648395551329
iteration: 43 HingeLoss: 0.6413376834383736
iteration: 44 HingeLoss: 0.6018071455816567
iteration: 45 HingeLoss: 0.5647131765771918
iteration: 46 HingeLoss: 0.5299055920841207
iteration: 47 HingeLoss: 0.4972434647691268
iteration: 48 HingeLoss: 0.46659455372638464
iteration: 49 HingeLoss: 0.4378347690667156
iteration: 50 HingeLoss: 0.41084766950820034
iteration: 51 HingeLoss: 0.3855239909341215
iteration: 52 HingeLoss: 0.36176120400947265
iteration: 53 HingeLoss: 0.3394630990649469
iteration: 54 HingeLoss: 0.31853939656768865
iteration: 55 HingeLoss: 0.2989053816017104
iteration: 56 HingeLoss: 0.280481560878071
iteration: 57 HingeLoss: 0.26319334088613433
iteration: 58 HingeLoss: 0.2469707258828247
iteration: 59 HingeLoss: 0.23174803449710954
iteration: 60 HingeLoss: 0.21746363380231074
iteration: 61 HingeLoss: 0.20405968977957115
iteration: 62 HingeLoss: 0.19148193316216144
iteration: 63 HingeLoss: 0.1796794397125908
iteration: 64 HingeLoss: 0.16860442404291706
iteration: 65 HingeLoss: 0.1582120461434841
iteration: 66 HingeLoss: 0.14846022983677137
iteration: 67 HingeLoss: 0.13930949242131854
iteration: 68 HingeLoss: 0.13072278481599484
iteration: 69 HingeLoss: 0.12266534155739874

```

# Output\_hinge\_train.txt

```

iteration: 70 HingeLoss: 0.11510454004306236
iteration: 71 HingeLoss: 0.10800976845057178
iteration: 72 HingeLoss: 0.10135230179784106
iteration: 73 HingeLoss: 0.09510518564273689
iteration: 74 HingeLoss: 0.08924312695118404
iteration: 75 HingeLoss: 0.08374239169190222
iteration: 76 HingeLoss: 0.07858070874316145
iteration: 77 HingeLoss: 0.0737371797224974
iteration: 78 HingeLoss: 0.06919219437431022
iteration: 79 HingeLoss: 0.06492735117277111
iteration: 80 HingeLoss: 0.060925382818578504
iteration: 81 HingeLoss: 0.05717008632791748
iteration: 82 HingeLoss: 0.05364625743057082
iteration: 83 HingeLoss: 0.050339629011574856
iteration: 84 HingeLoss: 0.04723681334718645
iteration: 85 HingeLoss: 0.044325247901288146
iteration: 86 HingeLoss: 0.04159314446277469
iteration: 87 HingeLoss: 0.0390294414179908
iteration: 88 HingeLoss: 0.03662375896498294
iteration: 89 HingeLoss: 0.0343663570882388
iteration: 90 HingeLoss: 0.032248096123764176
iteration: 91 HingeLoss: 0.030260399754835635
iteration: 92 HingeLoss: 0.044250254330423955
iteration: 93 HingeLoss: 56.86673670353715
iteration: 94 HingeLoss: 90.90996450967044
iteration: 95 HingeLoss: 13.274300944459947
iteration: 96 HingeLoss: 47.79684178845731
iteration: 97 HingeLoss: 4.734064230860217
iteration: 98 HingeLoss: 4.442267709110795
iteration: 99 HingeLoss: 4.168456834778241
[-0.00331318 -0.00209452 -0.00761631 ... 0.00780259 -0.00725185
0.00066301]

```

## CROSS VALIDATION 13

```

iteration: 0 HingeLoss: 180.45576042478
iteration: 1 HingeLoss: 7.934263731708771
iteration: 2 HingeLoss: 7.4452144821309885
iteration: 3 HingeLoss: 6.9863090715532605
iteration: 4 HingeLoss: 6.55568950503858
iteration: 5 HingeLoss: 6.151612310063168
iteration: 6 HingeLoss: 5.7724414776257715
iteration: 7 HingeLoss: 5.416641838450361
iteration: 8 HingeLoss: 5.0827728474639375
iteration: 9 HingeLoss: 4.769482751384508
iteration: 10 HingeLoss: 4.475503115805088
iteration: 11 HingeLoss: 4.199643689615313
iteration: 12 HingeLoss: 3.9407875859679873
iteration: 13 HingeLoss: 3.697886760279398
iteration: 14 HingeLoss: 3.46995776695505
iteration: 15 HingeLoss: 3.2560777776607583
iteration: 16 HingeLoss: 3.0553808450180964
iteration: 17 HingeLoss: 2.8670543965968203
iteration: 18 HingeLoss: 2.6903359450093314

```

Output\_hinge\_train.txt

iteration: 19 HingeLoss: 2.524510000787083  
iteration: 20 HingeLoss: 2.3689051755400357  
iteration: 21 HingeLoss: 2.222891463670481  
iteration: 22 HingeLoss: 2.0858776916356083  
iteration: 23 HingeLoss: 1.9573091244314862  
iteration: 24 HingeLoss: 1.8366652196077153  
iteration: 25 HingeLoss: 1.7330522043018797  
iteration: 26 HingeLoss: 3.1264119499427  
iteration: 27 HingeLoss: 2.9337073122231287  
iteration: 28 HingeLoss: 2.7528805325699914  
iteration: 29 HingeLoss: 2.58319948790667  
iteration: 30 HingeLoss: 2.4239771814913045  
iteration: 31 HingeLoss: 2.2745689614362474  
iteration: 32 HingeLoss: 2.1343699106714276  
iteration: 33 HingeLoss: 2.0028123977841594  
iteration: 34 HingeLoss: 1.8793637788194262  
iteration: 35 HingeLoss: 1.7635242407357374  
iteration: 36 HingeLoss: 1.6548247777852796  
iteration: 37 HingeLoss: 1.5528252926251969  
iteration: 38 HingeLoss: 1.4571128144718895  
iteration: 39 HingeLoss: 1.3672998270840633  
iteration: 40 HingeLoss: 1.2830226998049479  
iteration: 41 HingeLoss: 1.203940215311363  
iteration: 42 HingeLoss: 1.129732188108853  
iteration: 43 HingeLoss: 1.0600981681795059  
iteration: 44 HingeLoss: 0.994756224533865  
iteration: 45 HingeLoss: 0.933441803741812  
iteration: 46 HingeLoss: 0.8759066588209177  
iteration: 47 HingeLoss: 0.8219178441455701  
iteration: 48 HingeLoss: 0.7712567723075393  
iteration: 49 HingeLoss: 0.723718329109414  
iteration: 50 HingeLoss: 0.6791100431077565  
iteration: 51 HingeLoss: 0.637251306343651  
iteration: 52 HingeLoss: 0.5979726431055808  
iteration: 53 HingeLoss: 0.5611150237640259  
iteration: 54 HingeLoss: 0.5265292208996791  
iteration: 55 HingeLoss: 0.49407520511839303  
iteration: 56 HingeLoss: 0.46362157810666504  
iteration: 57 HingeLoss: 0.43504504063224203  
iteration: 58 HingeLoss: 0.40822989333590776  
iteration: 59 HingeLoss: 0.3830675682932856  
iteration: 60 HingeLoss: 0.359456189450063  
iteration: 61 HingeLoss: 0.3373001601509483  
iteration: 62 HingeLoss: 0.3165097760923684  
iteration: 63 HingeLoss: 0.29700086213184534  
iteration: 64 HingeLoss: 0.278694431483585  
iteration: 65 HingeLoss: 0.2615163659204431  
iteration: 66 HingeLoss: 0.24539711568748437  
iteration: 67 HingeLoss: 0.23027141791216355  
iteration: 68 HingeLoss: 0.21607803237103243  
iteration: 69 HingeLoss: 0.20275949354316594  
iteration: 70 HingeLoss: 0.19026187794642532

# Output\_hinge\_train.txt

```

iteration: 71 HingeLoss: 0.17853458581456677
iteration: 72 HingeLoss: 0.16753013623125426
iteration: 73 HingeLoss: 0.1572039748915286
iteration: 74 HingeLoss: 0.14751429371240438
iteration: 75 HingeLoss: 0.13842186156224306
iteration: 76 HingeLoss: 0.12988986542356726
iteration: 77 HingeLoss: 0.12188376134622347
iteration: 78 HingeLoss: 0.11437113458743899
iteration: 79 HingeLoss: 0.10732156837251558
iteration: 80 HingeLoss: 0.10070652074480262
iteration: 81 HingeLoss: 0.09449920900634738
iteration: 82 HingeLoss: 0.0886745012813503
iteration: 83 HingeLoss: 0.08320881476339177
iteration: 84 HingeLoss: 0.07808002023445947
iteration: 85 HingeLoss: 0.07326735246919772
iteration: 86 HingeLoss: 0.0687513261616256
iteration: 87 HingeLoss: 0.06451365703393465
iteration: 88 HingeLoss: 0.06053718780795278
iteration: 89 HingeLoss: 0.05680581873955247
iteration: 90 HingeLoss: 0.053304442434753616
iteration: 91 HingeLoss: 0.05001888268360783
iteration: 92 HingeLoss: 0.04693583706421683
iteration: 93 HingeLoss: 0.04404282308450421
iteration: 94 HingeLoss: 0.04132812764368037
iteration: 95 HingeLoss: 0.03878075960878349
iteration: 96 HingeLoss: 0.036390405314290254
iteration: 97 HingeLoss: 0.03414738680462543
iteration: 98 HingeLoss: 0.032042622650504254
iteration: 99 HingeLoss: 0.030067591180462837
[-2.27605327e-03 -8.15482719e-04 -6.57212556e-04 ... 1.15227437e-03
 1.19345185e-03 9.38523307e-05]

```

## CROSS VALIDATION 14

```

iteration: 0 HingeLoss: 180.45576042478
iteration: 1 HingeLoss: 7.934263731708771
iteration: 2 HingeLoss: 7.4452144821309885
iteration: 3 HingeLoss: 6.9863090715532605
iteration: 4 HingeLoss: 6.55568950503858
iteration: 5 HingeLoss: 6.151612310063168
iteration: 6 HingeLoss: 5.7724414776257715
iteration: 7 HingeLoss: 5.416641838450361
iteration: 8 HingeLoss: 5.0827728474639375
iteration: 9 HingeLoss: 4.769482751384508
iteration: 10 HingeLoss: 4.475503115805088
iteration: 11 HingeLoss: 4.199643689615313
iteration: 12 HingeLoss: 3.9407875859679873
iteration: 13 HingeLoss: 3.697886760279398
iteration: 14 HingeLoss: 3.46995776695505
iteration: 15 HingeLoss: 3.2560777776607583
iteration: 16 HingeLoss: 3.0553808450180964
iteration: 17 HingeLoss: 2.8670543965968203
iteration: 18 HingeLoss: 2.6903359450093314
iteration: 19 HingeLoss: 2.524510000787083

```

Output\_hinge\_train.txt

iteration: 20 HingeLoss: 2.3689051755400357  
iteration: 21 HingeLoss: 2.222891463670481  
iteration: 22 HingeLoss: 2.0858776916356083  
iteration: 23 HingeLoss: 1.9573091244314862  
iteration: 24 HingeLoss: 1.8366652196077153  
iteration: 25 HingeLoss: 1.7234575197193076  
iteration: 26 HingeLoss: 1.6172276746828367  
iteration: 27 HingeLoss: 1.5175455860298888  
iteration: 28 HingeLoss: 1.4240076655443343  
iteration: 29 HingeLoss: 1.3362352012330827  
iteration: 30 HingeLoss: 1.2538728240145336  
iteration: 31 HingeLoss: 1.1765870689167233  
iteration: 32 HingeLoss: 1.1040650249598196  
iteration: 33 HingeLoss: 1.036013068256663  
iteration: 34 HingeLoss: 0.9721556732019888  
iteration: 35 HingeLoss: 0.912234296937146  
iteration: 36 HingeLoss: 0.85600633257376  
iteration: 37 HingeLoss: 0.8032441269382202  
iteration: 38 HingeLoss: 0.7537340588600698  
iteration: 39 HingeLoss: 0.7072756742725254  
iteration: 40 HingeLoss: 0.6636808746233457  
iteration: 41 HingeLoss: 0.6227731553101422  
iteration: 42 HingeLoss: 0.5843868910567329  
iteration: 43 HingeLoss: 0.5483666653372083  
iteration: 44 HingeLoss: 0.5145666411327093  
iteration: 45 HingeLoss: 0.4828499704732739  
iteration: 46 HingeLoss: 0.4530882403741215  
iteration: 47 HingeLoss: 0.4251609529231206  
iteration: 48 HingeLoss: 0.3989550374144301  
iteration: 49 HingeLoss: 0.3743643925530724  
iteration: 50 HingeLoss: 0.3512894568769308  
iteration: 51 HingeLoss: 0.3296368056569228  
iteration: 52 HingeLoss: 0.30931877264328894  
iteration: 53 HingeLoss: 0.2902530951265497  
iteration: 54 HingeLoss: 0.27236258087606136  
iteration: 55 HingeLoss: 0.2555747956076961  
iteration: 56 HingeLoss: 0.23982176971527075  
iteration: 57 HingeLoss: 0.22503972307836004  
iteration: 58 HingeLoss: 0.21116880683230257  
iteration: 59 HingeLoss: 0.19815286105489496  
iteration: 60 HingeLoss: 0.18593918738870374  
iteration: 61 HingeLoss: 0.1744783356784009  
iteration: 62 HingeLoss: 0.16372390375926862  
iteration: 63 HingeLoss: 0.1536323495862678  
iteration: 64 HingeLoss: 0.1441628149430256  
iteration: 65 HingeLoss: 0.13527696001698528  
iteration: 66 HingeLoss: 0.12693880817095105  
iteration: 67 HingeLoss: 0.11911460028254854  
iteration: 68 HingeLoss: 0.11177265806185656  
iteration: 69 HingeLoss: 0.10488325579381617  
iteration: 70 HingeLoss: 0.0984184999861347  
iteration: 71 HingeLoss: 0.0923522164354083

Output\_hinge\_train.txt

iteration: 72 HingeLoss: 0.08665984425422112  
iteration: 73 HingeLoss: 0.08661384635728013  
Convergence reached in 73 iterations  
[-2.56642633e-03 -9.54678760e-05 -2.12659259e-04 ... 1.61631296e-03  
7.44833208e-04 -4.85392541e-06]

CROSS VALIDATION 15

iteration: 0 HingeLoss: 180.45576042478  
iteration: 1 HingeLoss: 7.934263731708771  
iteration: 2 HingeLoss: 7.4452144821309885  
iteration: 3 HingeLoss: 6.9863090715532605  
iteration: 4 HingeLoss: 6.55568950503858  
iteration: 5 HingeLoss: 6.151612310063168  
iteration: 6 HingeLoss: 5.7724414776257715  
iteration: 7 HingeLoss: 5.416641838450361  
iteration: 8 HingeLoss: 5.0827728474639375  
iteration: 9 HingeLoss: 4.769482751384508  
iteration: 10 HingeLoss: 4.475503115805088  
iteration: 11 HingeLoss: 4.199643689615313  
iteration: 12 HingeLoss: 3.9407875859679873  
iteration: 13 HingeLoss: 3.697886760279398  
iteration: 14 HingeLoss: 3.46995776695505  
iteration: 15 HingeLoss: 3.2560777776607583  
iteration: 16 HingeLoss: 3.0553808450180964  
iteration: 17 HingeLoss: 2.8670543965968203  
iteration: 18 HingeLoss: 2.6903359450093314  
iteration: 19 HingeLoss: 2.524510000787083  
iteration: 20 HingeLoss: 2.3689051755400357  
iteration: 21 HingeLoss: 2.222891463670481  
iteration: 22 HingeLoss: 2.0858776916356083  
iteration: 23 HingeLoss: 1.9573091244314862  
iteration: 24 HingeLoss: 1.8366652196077153  
iteration: 25 HingeLoss: 1.7330522043018841  
iteration: 26 HingeLoss: 3.1269498548035335  
iteration: 27 HingeLoss: 2.9342120619006375  
iteration: 28 HingeLoss: 2.7533541706712588  
iteration: 29 HingeLoss: 2.583643932075669  
iteration: 30 HingeLoss: 2.424394231172965  
iteration: 31 HingeLoss: 2.2749603051619753  
iteration: 32 HingeLoss: 2.1347371328955433  
iteration: 33 HingeLoss: 2.0031569852989684  
iteration: 34 HingeLoss: 1.8796871267748712  
iteration: 35 HingeLoss: 1.7638276582880217  
iteration: 36 HingeLoss: 1.6551094933973116  
iteration: 37 HingeLoss: 1.5530924590403385  
iteration: 38 HingeLoss: 1.4573635133811285  
iteration: 39 HingeLoss: 1.3675350735055127  
iteration: 40 HingeLoss: 1.2832434461934052  
iteration: 41 HingeLoss: 1.2041473554145659  
iteration: 42 HingeLoss: 1.1299265605860407  
iteration: 43 HingeLoss: 1.0602805599969478  
iteration: 44 HingeLoss: 0.9949273741510893  
iteration: 45 HingeLoss: 0.9336024041014492

Output\_hinge\_train.txt

iteration: 46 HingeLoss: 0.8760573601542528  
iteration: 47 HingeLoss: 0.8220592566051714  
iteration: 48 HingeLoss: 0.7713894684376128  
iteration: 49 HingeLoss: 0.7238428461638946  
iteration: 50 HingeLoss: 0.6792268852255178  
iteration: 51 HingeLoss: 0.6373609465896396  
iteration: 52 HingeLoss: 0.5980755253861377  
iteration: 53 HingeLoss: 0.5612115646241557  
iteration: 54 HingeLoss: 0.5266198112095376  
iteration: 55 HingeLoss: 0.49416021165582447  
iteration: 56 HingeLoss: 0.46370134504219457  
iteration: 57 HingeLoss: 0.43511989092253744  
iteration: 58 HingeLoss: 0.40830013003135196  
iteration: 59 HingeLoss: 0.383133475764953  
iteration: 60 HingeLoss: 0.3595180345410672  
iteration: 61 HingeLoss: 0.3373581932568248  
iteration: 62 HingeLoss: 0.3165642321748637  
iteration: 63 HingeLoss: 0.2970519616702201  
iteration: 64 HingeLoss: 0.27874238136727975  
iteration: 65 HingeLoss: 0.261561360286722  
iteration: 66 HingeLoss: 0.2454393367074509  
iteration: 67 HingeLoss: 0.2303110365283243  
iteration: 68 HingeLoss: 0.21611520898940262  
iteration: 69 HingeLoss: 0.2027943786827133  
iteration: 70 HingeLoss: 0.19029461284848453  
iteration: 71 HingeLoss: 0.17856530301469067  
iteration: 72 HingeLoss: 0.16755896009581764  
iteration: 73 HingeLoss: 0.15723102212125709  
iteration: 74 HingeLoss: 0.147539673814867  
iteration: 75 HingeLoss: 0.1384456772952212  
iteration: 76 HingeLoss: 0.12991221321109578  
iteration: 77 HingeLoss: 0.12190473166898773  
iteration: 78 HingeLoss: 0.11439081234910901  
iteration: 79 HingeLoss: 0.10734003324349992  
iteration: 80 HingeLoss: 0.10072384748481422  
iteration: 81 HingeLoss: 0.09451546776708751  
iteration: 82 HingeLoss: 0.08868975789053511  
iteration: 83 HingeLoss: 0.08322313099127267  
iteration: 84 HingeLoss: 0.0780934540439159  
iteration: 85 HingeLoss: 0.07327995825041415  
iteration: 86 HingeLoss: 0.06876315495230419  
iteration: 87 HingeLoss: 0.06452475672593433  
iteration: 88 HingeLoss: 0.06054760334119159  
iteration: 89 HingeLoss: 0.0568155922839582  
iteration: 90 HingeLoss: 0.053313613560999513  
iteration: 91 HingeLoss: 0.050027488523324275  
iteration: 92 HingeLoss: 0.04694391246032847  
iteration: 93 HingeLoss: 0.04405040073230022  
iteration: 94 HingeLoss: 0.041335238223189553  
iteration: 95 HingeLoss: 0.03878743190899032  
iteration: 96 HingeLoss: 0.03639666634969426  
iteration: 97 HingeLoss: 0.03415326192461631



Output\_hinge\_train.txt

iteration: 98 HingeLoss: 0.03204813564199527  
iteration: 99 HingeLoss: 0.03007276436419817  
[-2.27641841e-03 -8.15659567e-04 -6.57372817e-04 ... 1.15252169e-03  
1.19369885e-03 9.39098446e-05]

CROSS VALIDATION 16

iteration: 0 HingeLoss: 180.45576042478  
iteration: 1 HingeLoss: 7.250318510242278  
iteration: 2 HingeLoss: 6.803426026386031  
iteration: 3 HingeLoss: 6.38407893820379  
iteration: 4 HingeLoss: 5.990579412659092  
iteration: 5 HingeLoss: 5.621334267127979  
iteration: 6 HingeLoss: 5.2748485189950856  
iteration: 7 HingeLoss: 4.9497193328373825  
iteration: 8 HingeLoss: 4.64463034068922  
iteration: 9 HingeLoss: 4.3583463123927375  
iteration: 10 HingeLoss: 4.089708154455337  
iteration: 11 HingeLoss: 3.8376282171657103  
iteration: 12 HingeLoss: 3.6010858909681382  
iteration: 13 HingeLoss: 3.3791234742658873  
iteration: 14 HingeLoss: 3.170842295923395  
iteration: 15 HingeLoss: 2.975399076768281  
iteration: 16 HingeLoss: 2.7920025153617494  
iteration: 17 HingeLoss: 2.619910084214028  
iteration: 18 HingeLoss: 2.458425023473529  
iteration: 19 HingeLoss: 2.306893519917869  
iteration: 20 HingeLoss: 2.164702059825236  
iteration: 21 HingeLoss: 2.031274945008496  
iteration: 22 HingeLoss: 1.9060719619550692  
iteration: 23 HingeLoss: 1.7885861946355317  
iteration: 24 HingeLoss: 1.6783419721255115  
iteration: 25 HingeLoss: 1.574892942731311  
iteration: 26 HingeLoss: 1.4778202668218836  
iteration: 27 HingeLoss: 1.3867309210503598  
iteration: 28 HingeLoss: 1.301256107099358  
iteration: 29 HingeLoss: 1.221049758507465  
iteration: 30 HingeLoss: 1.1457871395314  
iteration: 31 HingeLoss: 1.0751635303710048  
iteration: 32 HingeLoss: 1.008892993433849  
iteration: 33 HingeLoss: 0.9467072156443773  
iteration: 34 HingeLoss: 0.8883544221103716  
iteration: 35 HingeLoss: 0.8335983567484482  
iteration: 36 HingeLoss: 0.7822173257413907  
iteration: 37 HingeLoss: 0.7340032999545036  
iteration: 38 HingeLoss: 0.6887610726769066  
iteration: 39 HingeLoss: 0.6463074692776551  
iteration: 40 HingeLoss: 0.6064706055767957  
iteration: 41 HingeLoss: 0.5690891919286716  
iteration: 42 HingeLoss: 0.5340118801998864  
iteration: 43 HingeLoss: 0.5010966509980043  
iteration: 44 HingeLoss: 0.4702102386700217  
iteration: 45 HingeLoss: 0.4412275917425748  
iteration: 46 HingeLoss: 0.4140313666193337

# Output\_hinge\_train.txt

```

iteration: 47 HingeLoss: 0.3885114524856953
iteration: 48 HingeLoss: 0.36456452549722423
iteration: 49 HingeLoss: 0.34209363044686536
iteration: 50 HingeLoss: 0.32100778821719844
iteration: 51 HingeLoss: 0.30122162742840974
iteration: 52 HingeLoss: 0.2826550387906087
iteration: 53 HingeLoss: 0.2652328507610514
iteration: 54 HingeLoss: 0.24888452519308693
iteration: 55 HingeLoss: 0.2335438717445799
iteration: 56 HingeLoss: 0.21914877988952522
iteration: 57 HingeLoss: 0.2056409674478311
iteration: 58 HingeLoss: 0.19296574461513205
iteration: 59 HingeLoss: 0.18107179253724662
iteration: 60 HingeLoss: 0.169910955532781
iteration: 61 HingeLoss: 0.15943804612264037
iteration: 62 HingeLoss: 0.1496106620770595
iteration: 63 HingeLoss: 0.14038901473942272
iteration: 64 HingeLoss: 0.13173576793179576
iteration: 65 HingeLoss: 0.12361588678994184
iteration: 66 HingeLoss: 0.11599649591578784
iteration: 67 HingeLoss: 0.10884674627303793
iteration: 68 HingeLoss: 0.1021376902870267
iteration: 69 HingeLoss: 0.09584216464312169
iteration: 70 HingeLoss: 0.0899346803091551
iteration: 71 HingeLoss: 0.08439131933661309
iteration: 72 HingeLoss: 0.07918963802275521
iteration: 73 HingeLoss: 0.07430857604159215
iteration: 74 HingeLoss: 0.06972837117581468
iteration: 75 HingeLoss: 626.5981996403002
iteration: 76 HingeLoss: 50.361396053787075
iteration: 77 HingeLoss: 46.32038308458122
iteration: 78 HingeLoss: 8.787742920799442
iteration: 79 HingeLoss: 5.890944681769443
iteration: 80 HingeLoss: 5.5278407853852105
iteration: 81 HingeLoss: 5.187117754327619
iteration: 82 HingeLoss: 4.867396084995213
iteration: 83 HingeLoss: 4.567381303125579
iteration: 84 HingeLoss: 4.285858722788046
iteration: 85 HingeLoss: 4.021688528419617
iteration: 86 HingeLoss: 3.773801159992603
iteration: 87 HingeLoss: 3.541192982629602
iteration: 88 HingeLoss: 3.322922223133164
iteration: 89 HingeLoss: 3.1181051569781655
iteration: 90 HingeLoss: 2.9259125303289397
iteration: 91 HingeLoss: 2.7455662025948313
iteration: 92 HingeLoss: 2.5763359959306595
iteration: 93 HingeLoss: 2.4175367389265356
iteration: 94 HingeLoss: 2.26852549251765
iteration: 95 HingeLoss: 2.1286989468824076
iteration: 96 HingeLoss: 1.9974909787896131
iteration: 97 HingeLoss: 1.874370359504998
iteration: 98 HingeLoss: 1.7588386039769592

```

Output\_hinge\_train.txt

iteration: 99 HingeLoss: 1.6504279525934165  
[-0.00272775 -0.00383705 -0.0042776 ... 0.0058749 0.00103704  
0.00296929]

CROSS VALIDATION 17

iteration: 0 HingeLoss: 180.45576042478  
iteration: 1 HingeLoss: 7.934807212019823  
iteration: 2 HingeLoss: 7.445724463601152  
iteration: 3 HingeLoss: 6.986787618971859  
iteration: 4 HingeLoss: 6.556138555926201  
iteration: 5 HingeLoss: 6.152033682516206  
iteration: 6 HingeLoss: 5.772836877677476  
iteration: 7 HingeLoss: 5.417012866978113  
iteration: 8 HingeLoss: 5.08312100667083  
iteration: 9 HingeLoss: 4.769809450881388  
iteration: 10 HingeLoss: 4.475809678317718  
iteration: 11 HingeLoss: 4.199931356339776  
iteration: 12 HingeLoss: 3.9410575215959693  
iteration: 13 HingeLoss: 3.698140057713747  
iteration: 14 HingeLoss: 3.4701954517346683  
iteration: 15 HingeLoss: 3.2563008121127535  
iteration: 16 HingeLoss: 3.0555901321540113  
iteration: 17 HingeLoss: 2.8672507837687045  
iteration: 18 HingeLoss: 2.6905202273404534  
iteration: 19 HingeLoss: 2.5246829243911963  
iteration: 20 HingeLoss: 2.369067440542206  
iteration: 21 HingeLoss: 2.2230437270417216  
iteration: 22 HingeLoss: 2.086020569852792  
iteration: 23 HingeLoss: 1.9574431959733118  
iteration: 24 HingeLoss: 1.836791027296821  
iteration: 25 HingeLoss: 1.7417140144215169  
iteration: 26 HingeLoss: 3.1270546329334947  
iteration: 27 HingeLoss: 2.9343103817545013  
iteration: 28 HingeLoss: 2.753446430321888  
iteration: 29 HingeLoss: 2.5837305050596537  
iteration: 30 HingeLoss: 2.4244754680029854  
iteration: 31 HingeLoss: 2.275036534745944  
iteration: 32 HingeLoss: 2.1348086638682595  
iteration: 33 HingeLoss: 2.003224107271719  
iteration: 34 HingeLoss: 1.879750111507984  
iteration: 35 HingeLoss: 1.7638867607911626  
iteration: 36 HingeLoss: 1.6551649529619537  
iteration: 37 HingeLoss: 1.5531445002085935  
iteration: 38 HingeLoss: 1.457412346854866  
iteration: 39 HingeLoss: 1.3675808969994336  
iteration: 40 HingeLoss: 1.2832864452355468  
iteration: 41 HingeLoss: 1.204187704097455  
iteration: 42 HingeLoss: 1.1299644222715528  
iteration: 43 HingeLoss: 1.0603160879777191  
iteration: 44 HingeLoss: 0.9949607122711601  
iteration: 45 HingeLoss: 0.9336336873386532  
iteration: 46 HingeLoss: 0.8760867151667096  
iteration: 47 HingeLoss: 0.8220868022440939

Output\_hinge\_train.txt

iteration: 48 HingeLoss: 0.7714153162285052  
iteration: 49 HingeLoss: 0.7238671007580936  
iteration: 50 HingeLoss: 0.6792496448238995  
iteration: 51 HingeLoss: 0.6373823033402103  
iteration: 52 HingeLoss: 0.5980955657571181  
iteration: 53 HingeLoss: 0.56123036975407  
iteration: 54 HingeLoss: 0.5266374572357239  
iteration: 55 HingeLoss: 0.49417677002269444  
iteration: 56 HingeLoss: 0.46371688279049594  
iteration: 57 HingeLoss: 0.435134470960785  
iteration: 58 HingeLoss: 0.40831381139052797  
iteration: 59 HingeLoss: 0.38314631383750986  
iteration: 60 HingeLoss: 0.35953008130519726  
iteration: 61 HingeLoss: 0.33736949748690787  
iteration: 62 HingeLoss: 0.31657483963894234  
iteration: 63 HingeLoss: 0.29706191531530285  
iteration: 64 HingeLoss: 0.27875172149322275  
iteration: 65 HingeLoss: 0.26157012470939417  
iteration: 66 HingeLoss: 0.24544756091183983  
iteration: 67 HingeLoss: 0.23031875381220734  
iteration: 68 HingeLoss: 0.21612245059816085  
iteration: 69 HingeLoss: 0.20280117393583608  
iteration: 70 HingeLoss: 0.19030098925827763  
iteration: 71 HingeLoss: 0.1785712863976661  
iteration: 72 HingeLoss: 0.16756457467721897  
iteration: 73 HingeLoss: 0.15723629063314096  
iteration: 74 HingeLoss: 0.14754461758813986  
iteration: 75 HingeLoss: 0.13845031634600302  
iteration: 76 HingeLoss: 0.12991656632176013  
iteration: 77 HingeLoss: 0.12190881646420713  
iteration: 78 HingeLoss: 0.1143946453672128  
iteration: 79 HingeLoss: 0.10734363000343394  
iteration: 80 HingeLoss: 0.10072722254897336  
iteration: 81 HingeLoss: 0.09451863480027488  
iteration: 82 HingeLoss: 0.08869272971528779  
iteration: 83 HingeLoss: 0.08322591963977678  
iteration: 84 HingeLoss: 0.07809607080672222  
iteration: 85 HingeLoss: 0.07328241372215043  
iteration: 86 HingeLoss: 0.06876545907457059  
iteration: 87 HingeLoss: 0.06452691882755414  
iteration: 88 HingeLoss: 0.06054963217598157  
iteration: 89 HingeLoss: 0.05681749606617049  
iteration: 90 HingeLoss: 0.05331539999857921  
iteration: 91 HingeLoss: 0.05002916484911703  
iteration: 92 HingeLoss: 0.046945485461364365  
iteration: 93 HingeLoss: 0.04405187677727283  
iteration: 94 HingeLoss: 0.04133662328824136  
iteration: 95 HingeLoss: 0.03878873160190839  
iteration: 96 HingeLoss: 0.036397885932615046  
iteration: 97 HingeLoss: 0.03415440633533053  
iteration: 98 HingeLoss: 0.03204920951393992  
iteration: 99 HingeLoss: 0.03007377204521617

Output\_hinge\_train.txt

[-2.27652630e-03 -8.15665860e-04 -6.57407141e-04 ... 1.15252555e-03  
1.19369774e-03 9.38838474e-05]

CROSS VALIDATION 18

iteration: 0 HingeLoss: 18.609823524494427  
iteration: 1 HingeLoss: 12.294238315729316  
iteration: 2 HingeLoss: 8.160219554426691  
iteration: 3 HingeLoss: 7.657242922387915  
iteration: 4 HingeLoss: 7.185268580261769  
iteration: 5 HingeLoss: 6.742385620227486  
iteration: 6 HingeLoss: 6.326800918302515  
iteration: 7 HingeLoss: 5.936831874425336  
iteration: 8 HingeLoss: 5.570899600022367  
iteration: 9 HingeLoss: 5.227522525477183  
iteration: 10 HingeLoss: 4.905310401620167  
iteration: 11 HingeLoss: 4.6029586709521775  
iteration: 12 HingeLoss: 4.319243185812648  
iteration: 13 HingeLoss: 4.05301525210736  
iteration: 14 HingeLoss: 3.8031969785290607  
iteration: 15 HingeLoss: 3.5687769124411433  
iteration: 16 HingeLoss: 3.3488059447551524  
iteration: 17 HingeLoss: 3.1423934672219125  
iteration: 18 HingeLoss: 2.948703766578193  
iteration: 19 HingeLoss: 2.766952640949592  
iteration: 20 HingeLoss: 2.5964042248103882  
iteration: 21 HingeLoss: 2.436368009645326  
iteration: 22 HingeLoss: 2.286196048250774  
iteration: 23 HingeLoss: 2.1452803313561533  
iteration: 24 HingeLoss: 2.0130503259442016  
iteration: 25 HingeLoss: 1.8889706653033644  
iteration: 26 HingeLoss: 1.7725389814598904  
iteration: 27 HingeLoss: 1.663283871213684  
iteration: 28 HingeLoss: 1.5607629875428943  
iteration: 29 HingeLoss: 1.4645612486498198  
iteration: 30 HingeLoss: 1.374289157396983  
iteration: 31 HingeLoss: 1.2895812243291804  
iteration: 32 HingeLoss: 1.210094487896743  
iteration: 33 HingeLoss: 1.1355071258887173  
iteration: 34 HingeLoss: 1.0655171524540297  
iteration: 35 HingeLoss: 0.9998411954351831  
iteration: 36 HingeLoss: 0.9382133490642102  
iteration: 37 HingeLoss: 0.8803840973757376  
iteration: 38 HingeLoss: 0.8261193039783173  
iteration: 39 HingeLoss: 0.7751992640938726  
iteration: 40 HingeLoss: 0.7274178150271788  
iteration: 41 HingeLoss: 0.682581501463912  
iteration: 42 HingeLoss: 0.6413441918519733  
iteration: 43 HingeLoss: 13.049205871933935  
iteration: 44 HingeLoss: 2.817997371374613  
iteration: 45 HingeLoss: 2.6443026787876676  
iteration: 46 HingeLoss: 2.4813141162132397  
iteration: 47 HingeLoss: 2.328371783120474  
iteration: 48 HingeLoss: 2.184856453686383

# Output\_hinge\_train.txt

```

iteration: 49 HingeLoss: 2.0501870697030524
iteration: 50 HingeLoss: 1.9238183880161355
iteration: 51 HingeLoss: 1.8052387729696615
iteration: 52 HingeLoss: 1.6939681249193235
iteration: 53 HingeLoss: 1.5895559364273157
iteration: 54 HingeLoss: 1.4915794682687171
iteration: 55 HingeLoss: 1.3996420378645296
iteration: 56 HingeLoss: 1.313371413211654
iteration: 57 HingeLoss: 1.232418305807228
iteration: 58 HingeLoss: 1.1564549564655313
iteration: 59 HingeLoss: 1.0851738083018094
iteration: 60 HingeLoss: 1.018286261510222
iteration: 61 HingeLoss: 0.955521504894338
iteration: 62 HingeLoss: 0.8966254194193253
iteration: 63 HingeLoss: 0.8413595493465964
iteration: 64 HingeLoss: 0.7895001367852701
iteration: 65 HingeLoss: 0.7408372157516082
iteration: 66 HingeLoss: 0.6951737620684785
iteration: 67 HingeLoss: 0.6523248956630088
iteration: 68 HingeLoss: 0.6121171320327224
iteration: 69 HingeLoss: 0.5743876798495349
iteration: 70 HingeLoss: 0.5389837818577746
iteration: 71 HingeLoss: 0.505762096397696
iteration: 72 HingeLoss: 0.47458811705041354
iteration: 73 HingeLoss: 0.44533562805455695
iteration: 74 HingeLoss: 0.41788619328974747
iteration: 75 HingeLoss: 0.3921286767579329
iteration: 76 HingeLoss: 0.36795879262111003
iteration: 77 HingeLoss: 0.34527868297366526
iteration: 78 HingeLoss: 0.32399652163982334
iteration: 79 HingeLoss: 0.3040261423920891
iteration: 80 HingeLoss: 0.28528669008542146
iteration: 81 HingeLoss: 0.26770229329467377
iteration: 82 HingeLoss: 0.25120175712988774
iteration: 83 HingeLoss: 0.23571827498572492
iteration: 84 HingeLoss: 0.22118915805798317
iteration: 85 HingeLoss: 0.2075555815320738
iteration: 86 HingeLoss: 0.19476234641584203
iteration: 87 HingeLoss: 0.18275765605244737
iteration: 88 HingeLoss: 0.17149290640846307
iteration: 89 HingeLoss: 0.16092248928811995
iteration: 90 HingeLoss: 0.15100360767695953
iteration: 91 HingeLoss: 0.14169610246726683
iteration: 92 HingeLoss: 0.13296228986373884
iteration: 93 HingeLoss: 0.12476680881108147
iteration: 94 HingeLoss: 0.11707647782581027
iteration: 95 HingeLoss: 0.10986016065259833
iteration: 96 HingeLoss: 0.10308864020125122
iteration: 97 HingeLoss: 0.09673450025390683
iteration: 98 HingeLoss: 0.09077201446352515
iteration: 99 HingeLoss: 0.0851770421942469
[-0.00277112 -0.00127236 -0.00200556 ... 0.00192233 0.00125694

```

0.00037468]

CROSS VALIDATION 19

iteration:	0	HingeLoss:	202.23446128294094
iteration:	1	HingeLoss:	60.10410411907076
iteration:	2	HingeLoss:	7.290294252495777
iteration:	3	HingeLoss:	6.840937758441293
iteration:	4	HingeLoss:	6.419278535821337
iteration:	5	HingeLoss:	6.023609390336797
iteration:	6	HingeLoss:	5.652328355107148
iteration:	7	HingeLoss:	5.303932204701262
iteration:	8	HingeLoss:	4.977010368948023
iteration:	9	HingeLoss:	4.670239221885247
iteration:	10	HingeLoss:	4.382376722724306
iteration:	11	HingeLoss:	4.1122573871329875
iteration:	12	HingeLoss:	3.858787568476613
iteration:	13	HingeLoss:	3.6209410299122644
iteration:	14	HingeLoss:	3.397754789408685
iteration:	15	HingeLoss:	3.1883252208692787
iteration:	16	HingeLoss:	2.9918043955727103
iteration:	17	HingeLoss:	2.807396649118429
iteration:	18	HingeLoss:	2.6343553599775573
iteration:	19	HingeLoss:	2.471979926606279
iteration:	20	HingeLoss:	2.31961293088281
iteration:	21	HingeLoss:	2.176637476383411
iteration:	22	HingeLoss:	2.0424746907207605
iteration:	23	HingeLoss:	1.9165813818322908
iteration:	24	HingeLoss:	1.7984478387293614
iteration:	25	HingeLoss:	1.6875957678030575
iteration:	26	HingeLoss:	1.583576356331215
iteration:	27	HingeLoss:	1.4859684553462915
iteration:	28	HingeLoss:	1.3943768745069631
iteration:	29	HingeLoss:	1.308430782069803
iteration:	30	HingeLoss:	1.2277822034829287
iteration:	31	HingeLoss:	1.1521046125227685
iteration:	32	HingeLoss:	1.0810916092698493
iteration:	33	HingeLoss:	1.0144556795710018
iteration:	34	HingeLoss:	0.9519270309654092
iteration:	35	HingeLoss:	0.8932525003613979
iteration:	36	HingeLoss:	0.8381945290414636
iteration:	37	HingeLoss:	0.7865302008455509
iteration:	38	HingeLoss:	0.7380503396384496
iteration:	39	HingeLoss:	0.6925586624071611
iteration:	40	HingeLoss:	0.6498709845593426
iteration:	41	HingeLoss:	0.6098144742052718
iteration:	42	HingeLoss:	0.5722269524041117
iteration:	43	HingeLoss:	0.536956236541338
iteration:	44	HingeLoss:	0.5038595241788293
iteration:	45	HingeLoss:	0.4728028148829804
iteration:	46	HingeLoss:	0.4436603676899644
iteration:	47	HingeLoss:	0.4163141920115499
iteration:	48	HingeLoss:	0.39065356992028244
iteration:	49	HingeLoss:	0.36657460787987506

# Output\_hinge\_train.txt

```

iteration: 50 HingeLoss: 0.3439798161058798
iteration: 51 HingeLoss: 0.3227777138535698
iteration: 52 HingeLoss: 0.3028824590349448
iteration: 53 HingeLoss: 0.28421350066526735
iteration: 54 HingeLoss: 0.26669525273197237
iteration: 55 HingeLoss: 0.2502567881655269
iteration: 56 HingeLoss: 0.23483155167320044
iteration: 57 HingeLoss: 0.22035709027308376
iteration: 58 HingeLoss: 0.20677480043735297
iteration: 59 HingeLoss: 0.1940296908210251
iteration: 60 HingeLoss: 0.18207015961555104
iteration: 61 HingeLoss: 0.1708477856258077
iteration: 62 HingeLoss: 0.160317132224609
iteration: 63 HingeLoss: 0.1504355633909975
iteration: 64 HingeLoss: 0.1411630710875013
iteration: 65 HingeLoss: 0.13246211327744767
iteration: 66 HingeLoss: 0.12429746192650604
iteration: 67 HingeLoss: 0.11663606037305793
iteration: 68 HingeLoss: 0.10944688948991808
iteration: 69 HingeLoss: 0.1027008420955319
iteration: 70 HingeLoss: 0.09637060510616867
iteration: 71 HingeLoss: 0.0904305489519754
iteration: 72 HingeLoss: 0.08485662380916374
iteration: 73 HingeLoss: 0.07962626222819845
iteration: 74 HingeLoss: 0.0747182877637553
iteration: 75 HingeLoss: 0.07011282923651127
iteration: 76 HingeLoss: 0.0657912402796357
iteration: 77 HingeLoss: 0.06173602384424529
iteration: 78 HingeLoss: 0.0579307613581643
iteration: 79 HingeLoss: 0.05436004625117122
iteration: 80 HingeLoss: 0.05100942157759193
iteration: 81 HingeLoss: 0.047865321483688765
iteration: 82 HingeLoss: 0.04491501628286127
iteration: 83 HingeLoss: 0.04214656091628165
iteration: 84 HingeLoss: 0.03954874659029469
iteration: 85 HingeLoss: 0.03711105539477401
iteration: 86 HingeLoss: 0.03482361771869552
iteration: 87 HingeLoss: 0.03267717229051413
iteration: 88 HingeLoss: 0.030663028681557226
iteration: 89 HingeLoss: 0.02877303212062012
iteration: 90 HingeLoss: 0.026999530477306827
iteration: 91 HingeLoss: 0.02533534328043939
iteration: 92 HingeLoss: 0.02377373264609942
iteration: 93 HingeLoss: 0.022308375997596146
iteration: 94 HingeLoss: 0.02093334046691134
iteration: 95 HingeLoss: 0.019643058873978405
iteration: 96 HingeLoss: 0.018432307186542072
iteration: 97 HingeLoss: 0.0172961833693389
iteration: 98 HingeLoss: 0.016230087536964404
iteration: 99 HingeLoss: 0.015229703330070296
[-8.69212989e-04 -2.60428215e-04 -6.66787620e-04 ... 4.71330713e-04
 1.52171106e-04 8.46404320e-05]

```



Output\_hinge\_train.txt

Accuracy (Hinge Loss): 0.8

eta = 0.001 lambda = 0.1

CROSS VALIDATION 0

iteration: 0 HingeLoss: 190.88766221015376  
iteration: 1 HingeLoss: 2.8262184096061533  
iteration: 2 HingeLoss: 2.766927356040336  
iteration: 3 HingeLoss: 2.708880165659684  
iteration: 4 HingeLoss: 2.652050743538734  
iteration: 5 HingeLoss: 2.596413542195779  
iteration: 6 HingeLoss: 2.5419435501080834  
iteration: 7 HingeLoss: 2.4886162804680345  
iteration: 8 HingeLoss: 2.436407760175167  
iteration: 9 HingeLoss: 2.385294519059152  
iteration: 10 HingeLoss: 2.335253579328844  
iteration: 11 HingeLoss: 2.2862624452426976  
iteration: 12 HingeLoss: 2.2382990929958715  
iteration: 13 HingeLoss: 2.19134196081951  
iteration: 14 HingeLoss: 2.1453699392877144  
iteration: 15 HingeLoss: 2.1003623618278655  
iteration: 16 HingeLoss: 2.056298995430036  
iteration: 17 HingeLoss: 2.013160031551314  
iteration: 18 HingeLoss: 1.9709260772109254  
iteration: 19 HingeLoss: 1.92957814627219  
iteration: 20 HingeLoss: 1.8890976509073605  
iteration: 21 HingeLoss: 1.8494663932415318  
iteration: 22 HingeLoss: 1.810666557171841  
iteration: 23 HingeLoss: 1.7726807003582932  
iteration: 24 HingeLoss: 1.735491746382624  
iteration: 25 HingeLoss: 1.6990829770716402  
iteration: 26 HingeLoss: 1.6634380249816272  
iteration: 27 HingeLoss: 1.6285408660404153  
iteration: 28 HingeLoss: 1.5943758123438112  
iteration: 29 HingeLoss: 1.56092750510315  
iteration: 30 HingeLoss: 1.5281809077408017  
iteration: 31 HingeLoss: 1.4961212991305288  
iteration: 32 HingeLoss: 1.4647342669796517  
iteration: 33 HingeLoss: 1.4340057013500478  
iteration: 34 HingeLoss: 1.4039217883150739  
iteration: 35 HingeLoss: 1.3744690037495637  
iteration: 36 HingeLoss: 1.3456341072501006  
iteration: 37 HingeLoss: 1.317404136182834  
iteration: 38 HingeLoss: 1.2897663998561748  
iteration: 39 HingeLoss: 1.2627084738157315  
iteration: 40 HingeLoss: 1.2362181942589385  
iteration: 41 HingeLoss: 1.2102836525668614  
iteration: 42 HingeLoss: 1.1848931899507134  
iteration: 43 HingeLoss: 1.1600353922106832  
iteration: 44 HingeLoss: 1.135699084604721  
iteration: 45 HingeLoss: 1.1118733268249703  
iteration: 46 HingeLoss: 1.0885474080795856  
iteration: 47 HingeLoss: 1.0657108422777328  
iteration: 48 HingeLoss: 1.0433533633156002

# Output\_hinge\_train.txt

```

iteration: 49 HingeLoss: 1.0214649204613049
iteration: 50 HingeLoss: 1.0000356738366203
iteration: 51 HingeLoss: 0.9790559899934884
iteration: 52 HingeLoss: 0.9585164375833373
iteration: 53 HingeLoss: 0.9384077831172487
iteration: 54 HingeLoss: 0.9187209868150692
iteration: 55 HingeLoss: 0.8994471985416127
iteration: 56 HingeLoss: 0.8805777538281078
iteration: 57 HingeLoss: 0.8621041699771106
iteration: 58 HingeLoss: 0.8440181422491432
iteration: 59 HingeLoss: 0.8263115401293206
iteration: 60 HingeLoss: 0.8089764036723018
iteration: 61 HingeLoss: 0.7920049399239283
iteration: 62 HingeLoss: 0.7753895194179221
iteration: 63 HingeLoss: 0.7591226727460867
iteration: 64 HingeLoss: 0.7431970872004575
iteration: 65 HingeLoss: 0.7276056034858982
iteration: 66 HingeLoss: 0.7123412125016634
iteration: 67 HingeLoss: 0.6973970521904787
iteration: 68 HingeLoss: 0.6827664044537274
iteration: 69 HingeLoss: 0.6684426921313494
iteration: 70 HingeLoss: 0.6544194760451014
iteration: 71 HingeLoss: 0.6406904521038443
iteration: 72 HingeLoss: 0.6272494484695601
iteration: 73 HingeLoss: 0.6140904227828227
iteration: 74 HingeLoss: 0.6012074594464732
iteration: 75 HingeLoss: 0.5885947669662844
iteration: 76 HingeLoss: 0.5762466753474131
iteration: 77 HingeLoss: 0.5641576335454708
iteration: 78 HingeLoss: 0.5523222069710715
iteration: 79 HingeLoss: 0.5407350750467289
iteration: 80 HingeLoss: 0.5293910288150082
iteration: 81 HingeLoss: 0.5182849685968567
iteration: 82 HingeLoss: 0.5074119016990595
iteration: 83 HingeLoss: 0.4967669401697892
iteration: 84 HingeLoss: 0.4863452986012458
iteration: 85 HingeLoss: 0.4761422919783897
iteration: 86 HingeLoss: 0.4661533335728087
iteration: 87 HingeLoss: 0.4563739328807719
iteration: 88 HingeLoss: 0.4467996936045343
iteration: 89 HingeLoss: 0.43742631167599877
iteration: 90 HingeLoss: 0.4282495733218339
iteration: 91 HingeLoss: 0.41926535316918767
iteration: 92 HingeLoss: 0.4104696123911385
iteration: 93 HingeLoss: 0.4018583968910546
iteration: 94 HingeLoss: 0.39342783552504124
iteration: 95 HingeLoss: 0.38517413836168235
iteration: 96 HingeLoss: 0.377093594978288
iteration: 97 HingeLoss: 0.36918257279288663
iteration: 98 HingeLoss: 0.3614375154312088
iteration: 99 HingeLoss: 0.3538549411279317
[-0.00719351  0.00052873  0.00080373 ...  0.00221955  0.00293277

```

-0.00035222]

## CROSS VALIDATION 1

iteration:	0	HingeLoss:	89.15584701171356
iteration:	1	HingeLoss:	2.4779672354906843
iteration:	2	HingeLoss:	2.425982120824938
iteration:	3	HingeLoss:	2.3750875985238147
iteration:	4	HingeLoss:	2.3252607891205
iteration:	5	HingeLoss:	2.2764792931350377
iteration:	6	HingeLoss:	2.22872118100472
iteration:	7	HingeLoss:	2.181964983225709
iteration:	8	HingeLoss:	2.1361896807015137
iteration:	9	HingeLoss:	2.0913746952939034
iteration:	10	HingeLoss:	2.0474998805720825
iteration:	11	HingeLoss:	2.0045455127559304
iteration:	12	HingeLoss:	1.962492281849231
iteration:	13	HingeLoss:	1.9213212829589346
iteration:	14	HingeLoss:	1.8810140077965258
iteration:	15	HingeLoss:	1.8415523363576725
iteration:	16	HingeLoss:	1.8029185287764482
iteration:	17	HingeLoss:	1.765095217350426
iteration:	18	HingeLoss:	1.7280653987330894
iteration:	19	HingeLoss:	1.6918124262900294
iteration:	20	HingeLoss:	1.6563200026155067
iteration:	21	HingeLoss:	1.621572172206004
iteration:	22	HingeLoss:	1.5875533142874805
iteration:	23	HingeLoss:	1.5542481357931095
iteration:	24	HingeLoss:	1.5216416644883228
iteration:	25	HingeLoss:	1.4897192422400973
iteration:	26	HingeLoss:	1.458466518427433
iteration:	27	HingeLoss:	1.427869443490085
iteration:	28	HingeLoss:	1.3979142626126235
iteration:	29	HingeLoss:	1.3685875095410036
iteration:	30	HingeLoss:	1.3398760005288564
iteration:	31	HingeLoss:	1.3117668284107746
iteration:	32	HingeLoss:	1.2842473567999426
iteration:	33	HingeLoss:	1.2573052144074883
iteration:	34	HingeLoss:	1.2309282894810087
iteration:	35	HingeLoss:	1.2051047243597734
iteration:	36	HingeLoss:	1.1798229101441506
iteration:	37	HingeLoss:	1.1550714814768648
iteration:	38	HingeLoss:	1.1308393114337378
iteration:	39	HingeLoss:	1.1071155065216138
iteration:	40	HingeLoss:	1.0838894017812277
iteration:	41	HingeLoss:	1.0611505559928058
iteration:	42	HingeLoss:	1.0388887469822508
iteration:	43	HingeLoss:	1.0170939670257957
iteration:	44	HingeLoss:	0.9957564183510629
iteration:	45	HingeLoss:	0.9748665087325107
iteration:	46	HingeLoss:	0.9544148471792779
iteration:	47	HingeLoss:	0.9343922397134936
iteration:	48	HingeLoss:	0.9147896852371545
iteration:	49	HingeLoss:	0.8955983714857125

# Output\_hinge\_train.txt

```

iteration: 50 HingeLoss: 0.8768096710665478
iteration: 51 HingeLoss: 0.8584151375805533
iteration: 52 HingeLoss: 0.8404065018250844
iteration: 53 HingeLoss: 0.8227756680765648
iteration: 54 HingeLoss: 0.8055147104510794
iteration: 55 HingeLoss: 0.7886158693413206
iteration: 56 HingeLoss: 0.7720715479282819
iteration: 57 HingeLoss: 0.7558743087661333
iteration: 58 HingeLoss: 0.7400168704387382
iteration: 59 HingeLoss: 0.7244921042863208
iteration: 60 HingeLoss: 0.7092930312007987
iteration: 61 HingeLoss: 0.6944128184883462
iteration: 62 HingeLoss: 0.6798447767977823
iteration: 63 HingeLoss: 0.6655823571133896
iteration: 64 HingeLoss: 0.6516191478108315
iteration: 65 HingeLoss: 0.6379488717748236
iteration: 66 HingeLoss: 0.6245653835772762
iteration: 67 HingeLoss: 0.6114626667146417
iteration: 68 HingeLoss: 0.5986348309032092
iteration: 69 HingeLoss: 0.5860761094311511
iteration: 70 HingeLoss: 0.573780856566115
iteration: 71 HingeLoss: 0.561743545017202
iteration: 72 HingeLoss: 0.5499587634501933
iteration: 73 HingeLoss: 0.5384212140549006
iteration: 74 HingeLoss: 0.5271257101635544
iteration: 75 HingeLoss: 0.5160671739191517
iteration: 76 HingeLoss: 0.5052406339927261
iteration: 77 HingeLoss: 0.4946412233484989
iteration: 78 HingeLoss: 0.48426417705592145
iteration: 79 HingeLoss: 0.47410483014761545
iteration: 80 HingeLoss: 0.46415861552225257
iteration: 81 HingeLoss: 0.4544210618914273
iteration: 82 HingeLoss: 0.44488779176960574
iteration: 83 HingeLoss: 0.43555451950624
iteration: 84 HingeLoss: 0.4264170493591694
iteration: 85 HingeLoss: 0.4174712736084352
iteration: 86 HingeLoss: 0.4087131707096727
iteration: 87 HingeLoss: 0.4001388034862354
iteration: 88 HingeLoss: 0.3917443173592518
iteration: 89 HingeLoss: 0.3835259386148119
iteration: 90 HingeLoss: 0.375479972707506
iteration: 91 HingeLoss: 0.36760280259955425
iteration: 92 HingeLoss: 0.35989088713477874
iteration: 93 HingeLoss: 0.3523407594466886
iteration: 94 HingeLoss: 0.34494902539996064
iteration: 95 HingeLoss: 0.3377123620646188
iteration: 96 HingeLoss: 0.3306275162222188
iteration: 97 HingeLoss: 0.3236913029033775
iteration: 98 HingeLoss: 0.31690060395597813
iteration: 99 HingeLoss: 0.31025236664341566
[-0.00411286 -0.00083363 -0.0002304 ... 0.00272512 0.0026645
0.00069562]

```

## CROSS VALIDATION 2

iteration: 0 HingeLoss: 179.02412689332098  
iteration: 1 HingeLoss: 2.804594426827536  
iteration: 2 HingeLoss: 2.745757021400473  
iteration: 3 HingeLoss: 2.6881539621035593  
iteration: 4 HingeLoss: 2.6317593536690125  
iteration: 5 HingeLoss: 2.576547844084203  
iteration: 6 HingeLoss: 2.522494613194742  
iteration: 7 HingeLoss: 2.469575361546651  
iteration: 8 HingeLoss: 2.417766299462631  
iteration: 9 HingeLoss: 2.3670441363474857  
iteration: 10 HingeLoss: 2.3173860702179154  
iteration: 11 HingeLoss: 2.268769777451951  
iteration: 12 HingeLoss: 2.2211734027534513  
iteration: 13 HingeLoss: 2.1745755493271215  
iteration: 14 HingeLoss: 2.128955269259651  
iteration: 15 HingeLoss: 2.084292054102654  
iteration: 16 HingeLoss: 2.040565825653159  
iteration: 17 HingeLoss: 1.997756926927516  
iteration: 18 HingeLoss: 1.9558461133246667  
iteration: 19 HingeLoss: 1.9148145439747983  
iteration: 20 HingeLoss: 1.8746437732694894  
iteration: 21 HingeLoss: 1.8353157425695414  
iteration: 22 HingeLoss: 1.7968127720867888  
iteration: 23 HingeLoss: 1.7591175529361953  
iteration: 24 HingeLoss: 1.7222131393547107  
iteration: 25 HingeLoss: 1.6860829410833522  
iteration: 26 HingeLoss: 1.650710715909108  
iteration: 27 HingeLoss: 1.6160805623633046  
iteration: 28 HingeLoss: 1.5821769125731548  
iteration: 29 HingeLoss: 1.5489845252632708  
iteration: 30 HingeLoss: 1.5164884789039923  
iteration: 31 HingeLoss: 1.4846741650034714  
iteration: 32 HingeLoss: 1.4535272815404645  
iteration: 33 HingeLoss: 1.4230338265349107  
iteration: 34 HingeLoss: 1.3931800917533834  
iteration: 35 HingeLoss: 1.363952656546601  
iteration: 36 HingeLoss: 1.3353383818162148  
iteration: 37 HingeLoss: 1.3073244041081753  
iteration: 38 HingeLoss: 1.279898129830003  
iteration: 39 HingeLoss: 1.2530472295893826  
iteration: 40 HingeLoss: 1.226759632651524  
iteration: 41 HingeLoss: 1.201023521512802  
iteration: 42 HingeLoss: 1.1758273265882404  
iteration: 43 HingeLoss: 1.151159721010435  
iteration: 44 HingeLoss: 1.1270096155376053  
iteration: 45 HingeLoss: 1.103366153568457  
iteration: 46 HingeLoss: 1.0802187062616315  
iteration: 47 HingeLoss: 1.05755686775755  
iteration: 48 HingeLoss: 1.0353704505004886  
iteration: 49 HingeLoss: 1.0136494806587966  
iteration: 50 HingeLoss: 0.9923841936411947

# Output\_hinge\_train.txt

```

iteration: 51 HingeLoss: 0.9715650297071339
iteration: 52 HingeLoss: 0.9511826296692445
iteration: 53 HingeLoss: 0.9312278306859441
iteration: 54 HingeLoss: 0.9116916621423125
iteration: 55 HingeLoss: 0.8925653416173808
iteration: 56 HingeLoss: 0.8738402709360233
iteration: 57 HingeLoss: 0.8555080323036748
iteration: 58 HingeLoss: 0.8375603845221389
iteration: 59 HingeLoss: 0.8199892592847835
iteration: 60 HingeLoss: 0.8027867575494615
iteration: 61 HingeLoss: 0.7859451459875202
iteration: 62 HingeLoss: 0.7694568535073101
iteration: 63 HingeLoss: 0.7533144678506245
iteration: 64 HingeLoss: 0.7375107322605426
iteration: 65 HingeLoss: 0.7220385422191797
iteration: 66 HingeLoss: 0.7068909422538721
iteration: 67 HingeLoss: 0.6920611228103682
iteration: 68 HingeLoss: 0.6775424171916165
iteration: 69 HingeLoss: 0.6633282985607707
iteration: 70 HingeLoss: 0.6494123770070749
iteration: 71 HingeLoss: 0.6357883966732985
iteration: 72 HingeLoss: 0.6224502329434345
iteration: 73 HingeLoss: 0.6093918896894016
iteration: 74 HingeLoss: 0.5966074965755006
iteration: 75 HingeLoss: 0.5840913064194269
iteration: 76 HingeLoss: 0.571837692608643
iteration: 77 HingeLoss: 0.5598411465709509
iteration: 78 HingeLoss: 0.548096275298135
iteration: 79 HingeLoss: 0.5365977989215495
iteration: 80 HingeLoss: 0.5253405483385731
iteration: 81 HingeLoss: 0.5143194628888541
iteration: 82 HingeLoss: 0.5035295880793076
iteration: 83 HingeLoss: 0.49296607335683984
iteration: 84 HingeLoss: 0.48262416992779644
iteration: 85 HingeLoss: 0.47249922862315946
iteration: 86 HingeLoss: 0.46258669780852674
iteration: 87 HingeLoss: 0.4528821213379409
iteration: 88 HingeLoss: 0.4433811365506432
iteration: 89 HingeLoss: 0.4340794723098528
iteration: 90 HingeLoss: 0.42497294708269173
iteration: 91 HingeLoss: 0.41605746706039054
iteration: 92 HingeLoss: 0.4073290243179297
iteration: 93 HingeLoss: 0.39878369501228983
iteration: 94 HingeLoss: 0.3904176376185007
iteration: 95 HingeLoss: 0.3822270912026968
iteration: 96 HingeLoss: 0.37420837373140137
iteration: 97 HingeLoss: 0.36635788041628015
iteration: 98 HingeLoss: 0.35867208209362034
iteration: 99 HingeLoss: 0.3511475236378074
[-0.0048241 -0.00088933 -0.00495644 ... 0.00836813 0.00197823
0.00069442]

```

CROSS VALIDATION 3

Output\_hinge\_train.txt

iteration: 0 HingeLoss: 175.02341998828564  
iteration: 1 HingeLoss: 2.807818001361685  
iteration: 2 HingeLoss: 2.7489129687725713  
iteration: 3 HingeLoss: 2.6912437010594723  
iteration: 4 HingeLoss: 2.6347842731908315  
iteration: 5 HingeLoss: 2.579509304014651  
iteration: 6 HingeLoss: 2.5253939448484886  
iteration: 7 HingeLoss: 2.472413868308803  
iteration: 8 HingeLoss: 2.420545257374662  
iteration: 9 HingeLoss: 2.369764794680878  
iteration: 10 HingeLoss: 2.320049652035767  
iteration: 11 HingeLoss: 2.271377480158795  
iteration: 12 HingeLoss: 2.223726398633553  
iteration: 13 HingeLoss: 2.177074986071464  
iteration: 14 HingeLoss: 2.131402270481889  
iteration: 15 HingeLoss: 2.0866877198442197  
iteration: 16 HingeLoss: 2.042911232877787  
iteration: 17 HingeLoss: 2.000053130005388  
iteration: 18 HingeLoss: 1.9580941445064022  
iteration: 19 HingeLoss: 1.9170154138554958  
iteration: 20 HingeLoss: 1.8767984712430366  
iteration: 21 HingeLoss: 1.8374252372734015  
iteration: 22 HingeLoss: 1.7988780118374361  
iteration: 23 HingeLoss: 1.7611394661554387  
iteration: 24 HingeLoss: 1.724192634987054  
iteration: 25 HingeLoss: 1.6880209090046134  
iteration: 26 HingeLoss: 1.6526080273264556  
iteration: 27 HingeLoss: 1.6179380702069108  
iteration: 28 HingeLoss: 1.5839954518796242  
iteration: 29 HingeLoss: 1.5507649135510257  
iteration: 30 HingeLoss: 1.5182315165407942  
iteration: 31 HingeLoss: 1.4863806355662144  
iteration: 32 HingeLoss: 1.4551979521674339  
iteration: 33 HingeLoss: 1.4246694482706492  
iteration: 34 HingeLoss: 1.394781399886317  
iteration: 35 HingeLoss: 1.3655203709395876  
iteration: 36 HingeLoss: 1.3368732072301563  
iteration: 37 HingeLoss: 1.3088270305188399  
iteration: 38 HingeLoss: 1.281369232738202  
iteration: 39 HingeLoss: 1.2544874703246391  
iteration: 40 HingeLoss: 1.228169658669371  
iteration: 41 HingeLoss: 1.2024039666858464  
iteration: 42 HingeLoss: 1.177178811491115  
iteration: 43 HingeLoss: 1.1524828531987796  
iteration: 44 HingeLoss: 1.128304989821187  
iteration: 45 HingeLoss: 1.1046343522785667  
iteration: 46 HingeLoss: 1.0814602995128721  
iteration: 47 HingeLoss: 1.0587724137041252  
iteration: 48 HingeLoss: 1.0365604955871213  
iteration: 49 HingeLoss: 1.0148145598663811  
iteration: 50 HingeLoss: 0.9935248307272961  
iteration: 51 HingeLoss: 0.9726817374414417

# Output\_hinge\_train.txt

```

iteration: 52 HingeLoss: 0.9522759100640837
iteration: 53 HingeLoss: 0.9322981752219581
iteration: 54 HingeLoss: 0.9127395519894022
iteration: 55 HingeLoss: 0.8935912478510165
iteration: 56 HingeLoss: 0.8748446547490117
iteration: 57 HingeLoss: 0.8564913452134896
iteration: 58 HingeLoss: 0.8385230685738976
iteration: 59 HingeLoss: 0.8209317472499674
iteration: 60 HingeLoss: 0.8037094731204668
iteration: 61 HingeLoss: 0.7868485039681281
iteration: 62 HingeLoss: 0.7703412599991601
iteration: 63 HingeLoss: 0.7541803204357754
iteration: 64 HingeLoss: 0.738358420180206
iteration: 65 HingeLoss: 0.7228684465486999
iteration: 66 HingeLoss: 0.7077034360740384
iteration: 67 HingeLoss: 0.6928565713751325
iteration: 68 HingeLoss: 0.6783211780922911
iteration: 69 HingeLoss: 0.6640907218867841
iteration: 70 HingeLoss: 0.6501588055033508
iteration: 71 HingeLoss: 0.6365191658943375
iteration: 72 HingeLoss: 0.6231656714041613
iteration: 73 HingeLoss: 0.6100923190128462
iteration: 74 HingeLoss: 0.5972932316373853
iteration: 75 HingeLoss: 0.584762655489717
iteration: 76 HingeLoss: 0.5724949574901269
iteration: 77 HingeLoss: 0.5604846227349166
iteration: 78 HingeLoss: 0.5487262520171969
iteration: 79 HingeLoss: 0.5372145593996912
iteration: 80 HingeLoss: 0.5259443698384595
iteration: 81 HingeLoss: 0.5149106168564747
iteration: 82 HingeLoss: 0.5041083402660043
iteration: 83 HingeLoss: 0.4935326839387735
iteration: 84 HingeLoss: 0.48317889362290994
iteration: 85 HingeLoss: 0.4730423148056838
iteration: 86 HingeLoss: 0.4631183906210872
iteration: 87 HingeLoss: 0.453402659801311
iteration: 88 HingeLoss: 0.4438907546711935
iteration: 89 HingeLoss: 0.4345783991847513
iteration: 90 HingeLoss: 0.4254614070028905
iteration: 91 HingeLoss: 0.4165356796114564
iteration: 92 HingeLoss: 0.40779720447875834
iteration: 93 HingeLoss: 0.3992420532517483
iteration: 94 HingeLoss: 0.3908663799900433
iteration: 95 HingeLoss: 0.38266641943699586
iteration: 96 HingeLoss: 0.37463848532703437
iteration: 97 HingeLoss: 0.3667789687285144
iteration: 98 HingeLoss: 0.3590843364213361
iteration: 99 HingeLoss: 0.35155112930859556
[-9.18971123e-03 -3.05378475e-04 -7.85217023e-04 ... 5.77841592e-03
 2.72619248e-03 -5.79999269e-06]
CROSS VALIDATION 4
iteration: 0 HingeLoss: 175.02341998828564

```



Output\_hinge\_train.txt

iteration: 1 HingeLoss: 2.807818001361685  
iteration: 2 HingeLoss: 2.7489129687725713  
iteration: 3 HingeLoss: 2.6912437010594723  
iteration: 4 HingeLoss: 2.6347842731908315  
iteration: 5 HingeLoss: 2.579509304014651  
iteration: 6 HingeLoss: 2.5253939448484886  
iteration: 7 HingeLoss: 2.472413868308803  
iteration: 8 HingeLoss: 2.420545257374662  
iteration: 9 HingeLoss: 2.369764794680878  
iteration: 10 HingeLoss: 2.320049652035767  
iteration: 11 HingeLoss: 2.271377480158795  
iteration: 12 HingeLoss: 2.223726398633553  
iteration: 13 HingeLoss: 2.177074986071464  
iteration: 14 HingeLoss: 2.131402270481889  
iteration: 15 HingeLoss: 2.0866877198442197  
iteration: 16 HingeLoss: 2.042911232877787  
iteration: 17 HingeLoss: 2.000053130005388  
iteration: 18 HingeLoss: 1.9580941445064022  
iteration: 19 HingeLoss: 1.9170154138554958  
iteration: 20 HingeLoss: 1.8767984712430366  
iteration: 21 HingeLoss: 1.8374252372734015  
iteration: 22 HingeLoss: 1.7988780118374361  
iteration: 23 HingeLoss: 1.7611394661554387  
iteration: 24 HingeLoss: 1.724192634987054  
iteration: 25 HingeLoss: 1.6880209090046134  
iteration: 26 HingeLoss: 1.6526080273264556  
iteration: 27 HingeLoss: 1.6179380702069108  
iteration: 28 HingeLoss: 1.5839954518796242  
iteration: 29 HingeLoss: 1.5507649135510257  
iteration: 30 HingeLoss: 1.5182315165407942  
iteration: 31 HingeLoss: 1.4863806355662144  
iteration: 32 HingeLoss: 1.4551979521674339  
iteration: 33 HingeLoss: 1.4246694482706492  
iteration: 34 HingeLoss: 1.394781399886317  
iteration: 35 HingeLoss: 1.3655203709395876  
iteration: 36 HingeLoss: 1.3368732072301563  
iteration: 37 HingeLoss: 1.3088270305188399  
iteration: 38 HingeLoss: 1.281369232738202  
iteration: 39 HingeLoss: 1.2544874703246391  
iteration: 40 HingeLoss: 1.228169658669371  
iteration: 41 HingeLoss: 1.2024039666858464  
iteration: 42 HingeLoss: 1.177178811491115  
iteration: 43 HingeLoss: 1.1524828531987796  
iteration: 44 HingeLoss: 1.128304989821187  
iteration: 45 HingeLoss: 1.1046343522785667  
iteration: 46 HingeLoss: 1.0814602995128721  
iteration: 47 HingeLoss: 1.0587724137041252  
iteration: 48 HingeLoss: 1.0365604955871213  
iteration: 49 HingeLoss: 1.0148145598663811  
iteration: 50 HingeLoss: 0.9935248307272961  
iteration: 51 HingeLoss: 0.9726817374414417  
iteration: 52 HingeLoss: 0.9522759100640837

# Output\_hinge\_train.txt

```

iteration: 53 HingeLoss: 0.9322981752219581
iteration: 54 HingeLoss: 0.9127395519894022
iteration: 55 HingeLoss: 0.8935912478510165
iteration: 56 HingeLoss: 0.8748446547490117
iteration: 57 HingeLoss: 0.8564913452134896
iteration: 58 HingeLoss: 0.8385230685738976
iteration: 59 HingeLoss: 0.8209317472499674
iteration: 60 HingeLoss: 0.8037094731204668
iteration: 61 HingeLoss: 0.7868485039681281
iteration: 62 HingeLoss: 0.7703412599991601
iteration: 63 HingeLoss: 0.7541803204357754
iteration: 64 HingeLoss: 0.738358420180206
iteration: 65 HingeLoss: 0.7228684465486999
iteration: 66 HingeLoss: 0.7077034360740384
iteration: 67 HingeLoss: 0.6928565713751325
iteration: 68 HingeLoss: 0.6783211780922911
iteration: 69 HingeLoss: 0.6640907218867841
iteration: 70 HingeLoss: 0.6501588055033508
iteration: 71 HingeLoss: 0.6365191658943375
iteration: 72 HingeLoss: 0.6231656714041613
iteration: 73 HingeLoss: 0.6100923190128462
iteration: 74 HingeLoss: 0.5972932316373853
iteration: 75 HingeLoss: 0.584762655489717
iteration: 76 HingeLoss: 0.5724949574901269
iteration: 77 HingeLoss: 0.5604846227349166
iteration: 78 HingeLoss: 0.5487262520171969
iteration: 79 HingeLoss: 0.5372145593996912
iteration: 80 HingeLoss: 0.5259443698384595
iteration: 81 HingeLoss: 0.5149106168564747
iteration: 82 HingeLoss: 0.5041083402660043
iteration: 83 HingeLoss: 0.4935326839387735
iteration: 84 HingeLoss: 0.48317889362290994
iteration: 85 HingeLoss: 0.4730423148056838
iteration: 86 HingeLoss: 0.4631183906210872
iteration: 87 HingeLoss: 0.453402659801311
iteration: 88 HingeLoss: 0.4438907546711935
iteration: 89 HingeLoss: 0.4345783991847513
iteration: 90 HingeLoss: 0.4254614070028905
iteration: 91 HingeLoss: 0.4165356796114564
iteration: 92 HingeLoss: 0.40779720447875834
iteration: 93 HingeLoss: 0.3992420532517483
iteration: 94 HingeLoss: 0.3908663799900433
iteration: 95 HingeLoss: 0.38266641943699586
iteration: 96 HingeLoss: 0.37463848532703437
iteration: 97 HingeLoss: 0.3667789687285144
iteration: 98 HingeLoss: 0.3590843364213361
iteration: 99 HingeLoss: 0.35155112930859556
[-9.18971123e-03 -3.05378475e-04 -7.85217023e-04 ... 5.77841592e-03
 2.72619248e-03 -5.79999269e-06]
CROSS VALIDATION 5
iteration: 0 HingeLoss: 156.44730922371429
iteration: 1 HingeLoss: 22.987234169936624

```

# Output\_hinge\_train.txt

```

iteration: 2 HingeLoss: 2.6989723007092437
iteration: 3 HingeLoss: 2.6423507350474758
iteration: 4 HingeLoss: 2.5869170295564654
iteration: 5 HingeLoss: 2.5326462641943737
iteration: 6 HingeLoss: 2.4795140417153116
iteration: 7 HingeLoss: 2.427496476701634
iteration: 8 HingeLoss: 2.376570184826334
iteration: 9 HingeLoss: 2.326712272340689
iteration: 10 HingeLoss: 2.277900325782453
iteration: 11 HingeLoss: 2.23011240189996
iteration: 12 HingeLoss: 2.1833270177876005
iteration: 13 HingeLoss: 2.1375231412282587
iteration: 14 HingeLoss: 2.09268018123834
iteration: 15 HingeLoss: 2.0487779788111684
iteration: 16 HingeLoss: 2.005796797854566
iteration: 17 HingeLoss: 1.9637173163185615
iteration: 18 HingeLoss: 1.9225206175092175
iteration: 19 HingeLoss: 1.8821881815847015
iteration: 20 HingeLoss: 1.8427018772297457
iteration: 21 HingeLoss: 1.8040439535047756
iteration: 22 HingeLoss: 1.7661970318660314
iteration: 23 HingeLoss: 1.7291440983531006
iteration: 24 HingeLoss: 1.6928684959403488
iteration: 25 HingeLoss: 1.6573539170488083
iteration: 26 HingeLoss: 1.6225843962151534
iteration: 27 HingeLoss: 1.588544302914487
iteration: 28 HingeLoss: 1.5552183345336852
iteration: 29 HingeLoss: 1.5225915094921523
iteration: 30 HingeLoss: 1.4906491605069092
iteration: 31 HingeLoss: 1.4593769279989581
iteration: 32 HingeLoss: 1.428760753637981
iteration: 33 HingeLoss: 1.3987868740224656
iteration: 34 HingeLoss: 1.3694418144924108
iteration: 35 HingeLoss: 1.3407123830718384
iteration: 36 HingeLoss: 1.3125856645383809
iteration: 37 HingeLoss: 1.2850490146172895
iteration: 38 HingeLoss: 1.2580900542972364
iteration: 39 HingeLoss: 1.2316966642653757
iteration: 40 HingeLoss: 1.2058569794591425
iteration: 41 HingeLoss: 1.1805593837323534
iteration: 42 HingeLoss: 1.1557925046332038
iteration: 43 HingeLoss: 1.1315452082918267
iteration: 44 HingeLoss: 1.1078065944150863
iteration: 45 HingeLoss: 1.0845659913863972
iteration: 46 HingeLoss: 1.0618129514683265
iteration: 47 HingeLoss: 1.0395372461058519
iteration: 48 HingeLoss: 1.0177288613281472
iteration: 49 HingeLoss: 0.9963779932468317
iteration: 50 HingeLoss: 0.9754750436486677
iteration: 51 HingeLoss: 0.9550106156807134
iteration: 52 HingeLoss: 0.9349755096259973
iteration: 53 HingeLoss: 0.9153607187678174

```

# Output\_hinge\_train.txt

```

iteration: 54 HingeLoss: 0.8961574253407995
iteration: 55 HingeLoss: 0.877356996566899
iteration: 56 HingeLoss: 0.8589509807745661
iteration: 57 HingeLoss: 0.840931103599322
iteration: 58 HingeLoss: 0.8232892642640466
iteration: 59 HingeLoss: 0.8060175319372993
iteration: 60 HingeLoss: 0.7891081421680415
iteration: 61 HingeLoss: 0.7725534933951506
iteration: 62 HingeLoss: 0.7563461435301646
iteration: 63 HingeLoss: 0.7404788066117147
iteration: 64 HingeLoss: 0.7249443495301451
iteration: 65 HingeLoss: 0.709735788820848
iteration: 66 HingeLoss: 0.6948462875248675
iteration: 67 HingeLoss: 0.6802691521153689
iteration: 68 HingeLoss: 0.6659978294885849
iteration: 69 HingeLoss: 0.6520259040178894
iteration: 70 HingeLoss: 0.6383470946696714
iteration: 71 HingeLoss: 0.6249552521797211
iteration: 72 HingeLoss: 0.6118443562888439
iteration: 73 HingeLoss: 0.5990085130364746
iteration: 74 HingeLoss: 0.5864419521110664
iteration: 75 HingeLoss: 0.5741390242560653
iteration: 76 HingeLoss: 0.5620941987303069
iteration: 77 HingeLoss: 0.5503020608216879
iteration: 78 HingeLoss: 0.5387573094130007
iteration: 79 HingeLoss: 0.5274547545988332
iteration: 80 HingeLoss: 0.5163893153524651
iteration: 81 HingeLoss: 0.5055560172417056
iteration: 82 HingeLoss: 0.4949499901926584
iteration: 83 HingeLoss: 0.48456646630038974
iteration: 84 HingeLoss: 0.4744007776855392
iteration: 85 HingeLoss: 0.46444835439588295
iteration: 86 HingeLoss: 0.45470472235193243
iteration: 87 HingeLoss: 0.44516550133562166
iteration: 88 HingeLoss: 0.4358264030211986
iteration: 89 HingeLoss: 0.42668322904741907
iteration: 90 HingeLoss: 0.41773186913018884
iteration: 91 HingeLoss: 0.4089682992147983
iteration: 92 HingeLoss: 0.400388579666922
iteration: 93 HingeLoss: 0.39198885350156837
iteration: 94 HingeLoss: 0.38376534464918505
iteration: 95 HingeLoss: 0.3757143562581391
iteration: 96 HingeLoss: 0.3678322690328094
iteration: 97 HingeLoss: 0.36011553960654424
iteration: 98 HingeLoss: 0.3525606989487516
iteration: 99 HingeLoss: 0.3451643508054083
[-0.00200957 0.00114841 -0.00446655 ... 0.00104578 0.00040526
 0.0017314 ]
CROSS VALIDATION 6
iteration: 0 HingeLoss: 174.99306699006226
iteration: 1 HingeLoss: 2.8078695066613557
iteration: 2 HingeLoss: 2.7489633935458855

```

Output\_hinge\_train.txt

iteration: 3 HingeLoss: 2.6912930679747227  
iteration: 4 HingeLoss: 2.634832604440751  
iteration: 5 HingeLoss: 2.5795566213264003  
iteration: 6 HingeLoss: 2.525440269493409  
iteration: 7 HingeLoss: 2.4724592211119893  
iteration: 8 HingeLoss: 2.4205896587243165  
iteration: 9 HingeLoss: 2.369808264537486  
iteration: 10 HingeLoss: 2.320092209941059  
iteration: 11 HingeLoss: 2.27141914524454  
iteration: 12 HingeLoss: 2.223767189630153  
iteration: 13 HingeLoss: 2.1771149213163796  
iteration: 14 HingeLoss: 2.1314413679278803  
iteration: 15 HingeLoss: 2.0867259970674152  
iteration: 16 HingeLoss: 2.042948707085587  
iteration: 17 HingeLoss: 2.000089818044202  
iteration: 18 HingeLoss: 1.9581300628692198  
iteration: 19 HingeLoss: 1.917050578689298  
iteration: 20 HingeLoss: 1.8768328983560616  
iteration: 21 HingeLoss: 1.837458942142244  
iteration: 22 HingeLoss: 1.798911009614011  
iteration: 23 HingeLoss: 1.7611717716737887  
iteration: 24 HingeLoss: 1.7242242627700208  
iteration: 25 HingeLoss: 1.6880518732703615  
iteration: 26 HingeLoss: 1.6526383419948723  
iteration: 27 HingeLoss: 1.617967748905856  
iteration: 28 HingeLoss: 1.5840245079510602  
iteration: 29 HingeLoss: 1.5507933600570152  
iteration: 30 HingeLoss: 1.51825936626937  
iteration: 31 HingeLoss: 1.4864079010371318  
iteration: 32 HingeLoss: 1.4552246456377982  
iteration: 33 HingeLoss: 1.4246955817404214  
iteration: 34 HingeLoss: 1.3948069851037148  
iteration: 35 HingeLoss: 1.3655454194063603  
iteration: 36 HingeLoss: 1.3368977302067624  
iteration: 37 HingeLoss: 1.308851039029503  
iteration: 38 HingeLoss: 1.2813927375758687  
iteration: 39 HingeLoss: 1.2545104820558342  
iteration: 40 HingeLoss: 1.228192187638943  
iteration: 41 HingeLoss: 1.2024260230216206  
iteration: 42 HingeLoss: 1.1772004051084444  
iteration: 43 HingeLoss: 1.1525039938050046  
iteration: 44 HingeLoss: 1.128325686919999  
iteration: 45 HingeLoss: 1.104654615174279  
iteration: 46 HingeLoss: 1.0814801373146035  
iteration: 47 HingeLoss: 1.0587918353298942  
iteration: 48 HingeLoss: 1.0365795097678574  
iteration: 49 HingeLoss: 1.0148331751498476  
iteration: 50 HingeLoss: 0.9935430554819327  
iteration: 51 HingeLoss: 0.972699579860127  
iteration: 52 HingeLoss: 0.9522933781678193  
iteration: 53 HingeLoss: 0.9323152768634723  
iteration: 54 HingeLoss: 0.9127562948566832

# Output\_hinge\_train.txt

```

iteration: 55 HingeLoss: 0.8936076394707655
iteration: 56 HingeLoss: 0.8748607024900292
iteration: 57 HingeLoss: 0.8565070562899841
iteration: 58 HingeLoss: 0.8385384500487316
iteration: 59 HingeLoss: 0.820946806037834
iteration: 60 HingeLoss: 0.8037242159909948
iteration: 61 HingeLoss: 0.7868629375489278
iteration: 62 HingeLoss: 0.7703553907787997
iteration: 63 HingeLoss: 0.7541941547667014
iteration: 64 HingeLoss: 0.7383719642815962
iteration: 65 HingeLoss: 0.7228817065092612
iteration: 66 HingeLoss: 0.7077164178547433
iteration: 67 HingeLoss: 0.6928692808118981
iteration: 68 HingeLoss: 0.678333620898603
iteration: 69 HingeLoss: 0.6641029036562656
iteration: 70 HingeLoss: 0.6501707317122773
iteration: 71 HingeLoss: 0.6365308419040967
iteration: 72 HingeLoss: 0.6231771024636651
iteration: 73 HingeLoss: 0.6101035102608908
iteration: 74 HingeLoss: 0.59730418810496
iteration: 75 HingeLoss: 0.5847733821022655
iteration: 76 HingeLoss: 0.572505459069763
iteration: 77 HingeLoss: 0.5604949040025916
iteration: 78 HingeLoss: 0.548736317594821
iteration: 79 HingeLoss: 0.5372244138122122
iteration: 80 HingeLoss: 0.5259540175158967
iteration: 81 HingeLoss: 0.5149200621359095
iteration: 82 HingeLoss: 0.5041175873935314
iteration: 83 HingeLoss: 0.49354173707140925
iteration: 84 HingeLoss: 0.48318775683046056
iteration: 85 HingeLoss: 0.4730509920725755
iteration: 86 HingeLoss: 0.4631268858481571
iteration: 87 HingeLoss: 0.4534109768075603
iteration: 88 HingeLoss: 0.44389889719550607
iteration: 89 HingeLoss: 0.4345863708875716
iteration: 90 HingeLoss: 0.42546921146787176
iteration: 91 HingeLoss: 0.4165433203470708
iteration: 92 HingeLoss: 0.4078046849198737
iteration: 93 HingeLoss: 0.3992493767611721
iteration: 94 HingeLoss: 0.39087354986003575
iteration: 95 HingeLoss: 0.3826734388907487
iteration: 96 HingeLoss: 0.37464535752011996
iteration: 97 HingeLoss: 0.3667856967503051
iteration: 98 HingeLoss: 0.35909092329639186
iteration: 99 HingeLoss: 0.3515575779980247
[-9.19001004e-03 -3.05385829e-04 -7.85246065e-04 ... 5.77870930e-03
 2.72655838e-03 -5.86935971e-06]
CROSS VALIDATION 7
iteration: 0 HingeLoss: 174.99306699006226
iteration: 1 HingeLoss: 2.8078695066613557
iteration: 2 HingeLoss: 2.7489633935458855
iteration: 3 HingeLoss: 2.6912930679747227

```

Output\_hinge\_train.txt

iteration: 4 HingeLoss: 2.634832604440751  
iteration: 5 HingeLoss: 2.5795566213264003  
iteration: 6 HingeLoss: 2.525440269493409  
iteration: 7 HingeLoss: 2.4724592211119893  
iteration: 8 HingeLoss: 2.4205896587243165  
iteration: 9 HingeLoss: 2.369808264537486  
iteration: 10 HingeLoss: 2.320092209941059  
iteration: 11 HingeLoss: 2.27141914524454  
iteration: 12 HingeLoss: 2.223767189630153  
iteration: 13 HingeLoss: 2.1771149213163796  
iteration: 14 HingeLoss: 2.1314413679278803  
iteration: 15 HingeLoss: 2.0867259970674152  
iteration: 16 HingeLoss: 2.042948707085587  
iteration: 17 HingeLoss: 2.000089818044202  
iteration: 18 HingeLoss: 1.9581300628692198  
iteration: 19 HingeLoss: 1.917050578689298  
iteration: 20 HingeLoss: 1.8768328983560616  
iteration: 21 HingeLoss: 1.837458942142244  
iteration: 22 HingeLoss: 1.798911009614011  
iteration: 23 HingeLoss: 1.7611717716737887  
iteration: 24 HingeLoss: 1.7242242627700208  
iteration: 25 HingeLoss: 1.6880518732703615  
iteration: 26 HingeLoss: 1.6526383419948723  
iteration: 27 HingeLoss: 1.617967748905856  
iteration: 28 HingeLoss: 1.5840245079510602  
iteration: 29 HingeLoss: 1.5507933600570152  
iteration: 30 HingeLoss: 1.51825936626937  
iteration: 31 HingeLoss: 1.4864079010371318  
iteration: 32 HingeLoss: 1.4552246456377982  
iteration: 33 HingeLoss: 1.4246955817404214  
iteration: 34 HingeLoss: 1.3948069851037148  
iteration: 35 HingeLoss: 1.3655454194063603  
iteration: 36 HingeLoss: 1.3368977302067624  
iteration: 37 HingeLoss: 1.308851039029503  
iteration: 38 HingeLoss: 1.2813927375758687  
iteration: 39 HingeLoss: 1.2545104820558342  
iteration: 40 HingeLoss: 1.228192187638943  
iteration: 41 HingeLoss: 1.2024260230216206  
iteration: 42 HingeLoss: 1.1772004051084444  
iteration: 43 HingeLoss: 1.1525039938050046  
iteration: 44 HingeLoss: 1.128325686919999  
iteration: 45 HingeLoss: 1.104654615174279  
iteration: 46 HingeLoss: 1.0814801373146035  
iteration: 47 HingeLoss: 1.0587918353298942  
iteration: 48 HingeLoss: 1.0365795097678574  
iteration: 49 HingeLoss: 1.0148331751498476  
iteration: 50 HingeLoss: 0.9935430554819327  
iteration: 51 HingeLoss: 0.972699579860127  
iteration: 52 HingeLoss: 0.9522933781678193  
iteration: 53 HingeLoss: 0.9323152768634723  
iteration: 54 HingeLoss: 0.9127562948566832  
iteration: 55 HingeLoss: 0.8936076394707655

# Output\_hinge\_train.txt

```

iteration: 56 HingeLoss: 0.8748607024900292
iteration: 57 HingeLoss: 0.8565070562899841
iteration: 58 HingeLoss: 0.8385384500487316
iteration: 59 HingeLoss: 0.820946806037834
iteration: 60 HingeLoss: 0.8037242159909948
iteration: 61 HingeLoss: 0.7868629375489278
iteration: 62 HingeLoss: 0.7703553907787997
iteration: 63 HingeLoss: 0.7541941547667014
iteration: 64 HingeLoss: 0.7383719642815962
iteration: 65 HingeLoss: 0.7228817065092612
iteration: 66 HingeLoss: 0.7077164178547433
iteration: 67 HingeLoss: 0.6928692808118981
iteration: 68 HingeLoss: 0.678333620898603
iteration: 69 HingeLoss: 0.6641029036562656
iteration: 70 HingeLoss: 0.6501707317122773
iteration: 71 HingeLoss: 0.6365308419040967
iteration: 72 HingeLoss: 0.6231771024636651
iteration: 73 HingeLoss: 0.6101035102608908
iteration: 74 HingeLoss: 0.59730418810496
iteration: 75 HingeLoss: 0.5847733821022655
iteration: 76 HingeLoss: 0.572505459069763
iteration: 77 HingeLoss: 0.5604949040025916
iteration: 78 HingeLoss: 0.548736317594821
iteration: 79 HingeLoss: 0.5372244138122122
iteration: 80 HingeLoss: 0.5259540175158967
iteration: 81 HingeLoss: 0.5149200621359095
iteration: 82 HingeLoss: 0.5041175873935314
iteration: 83 HingeLoss: 0.49354173707140925
iteration: 84 HingeLoss: 0.48318775683046056
iteration: 85 HingeLoss: 0.4730509920725755
iteration: 86 HingeLoss: 0.4631268858481571
iteration: 87 HingeLoss: 0.4534109768075603
iteration: 88 HingeLoss: 0.44389889719550607
iteration: 89 HingeLoss: 0.4345863708875716
iteration: 90 HingeLoss: 0.42546921146787176
iteration: 91 HingeLoss: 0.4165433203470708
iteration: 92 HingeLoss: 0.4078046849198737
iteration: 93 HingeLoss: 0.3992493767611721
iteration: 94 HingeLoss: 0.39087354986003575
iteration: 95 HingeLoss: 0.3826734388907487
iteration: 96 HingeLoss: 0.37464535752011996
iteration: 97 HingeLoss: 0.3667856967503051
iteration: 98 HingeLoss: 0.35909092329639186
iteration: 99 HingeLoss: 0.3515575779980247
[-9.19001004e-03 -3.05385829e-04 -7.85246065e-04 ... 5.77870930e-03
 2.72655838e-03 -5.86935971e-06]
CROSS VALIDATION 8
iteration: 0 HingeLoss: 169.0065483366639
iteration: 1 HingeLoss: 2.5633880785911094
iteration: 2 HingeLoss: 2.5096109255723857
iteration: 3 HingeLoss: 2.4569619599752053
iteration: 4 HingeLoss: 2.4054175136284814

```



Output\_hinge\_train.txt

iteration: 5 HingeLoss: 2.354954414894163  
iteration: 6 HingeLoss: 2.305549978250498  
iteration: 7 HingeLoss: 2.257181994093828  
iteration: 8 HingeLoss: 2.209828718754338  
iteration: 9 HingeLoss: 2.163468864721257  
iteration: 10 HingeLoss: 2.1180815910731314  
iteration: 11 HingeLoss: 2.0736464941088495  
iteration: 12 HingeLoss: 2.030143598175229  
iteration: 13 HingeLoss: 1.987553346687028  
iteration: 14 HingeLoss: 1.9458565933353424  
iteration: 15 HingeLoss: 1.9050345934804462  
iteration: 16 HingeLoss: 1.8650689957252027  
iteration: 17 HingeLoss: 1.8259418336652482  
iteration: 18 HingeLoss: 1.7876355178122563  
iteration: 19 HingeLoss: 1.7501328276866417  
iteration: 20 HingeLoss: 1.7134169040761504  
iteration: 21 HingeLoss: 1.6774712414568502  
iteration: 22 HingeLoss: 1.6422796805731334  
iteration: 23 HingeLoss: 1.6078264011733703  
iteration: 24 HingeLoss: 1.5740959148979696  
iteration: 25 HingeLoss: 1.5410730583166359  
iteration: 26 HingeLoss: 1.5087429861116979  
iteration: 27 HingeLoss: 1.4770911644044489  
iteration: 28 HingeLoss: 1.446103364221481  
iteration: 29 HingeLoss: 1.4157656550981035  
iteration: 30 HingeLoss: 1.386064398815945  
iteration: 31 HingeLoss: 1.356986243271936  
iteration: 32 HingeLoss: 1.328518116475916  
iteration: 33 HingeLoss: 1.300647220674162  
iteration: 34 HingeLoss: 1.2733610265961994  
iteration: 35 HingeLoss: 1.2466472678223117  
iteration: 36 HingeLoss: 1.2204939352692084  
iteration: 37 HingeLoss: 1.1948892717913822  
iteration: 38 HingeLoss: 1.1698217668957236  
iteration: 39 HingeLoss: 1.1452801515670135  
iteration: 40 HingeLoss: 1.1212533932019755  
iteration: 41 HingeLoss: 1.097730690649607  
iteration: 42 HingeLoss: 1.0747014693555534  
iteration: 43 HingeLoss: 1.052155376608354  
iteration: 44 HingeLoss: 1.030082276885413  
iteration: 45 HingeLoss: 1.0084722472966086  
iteration: 46 HingeLoss: 0.9873155731234914  
iteration: 47 HingeLoss: 0.9666027434520621  
iteration: 48 HingeLoss: 0.9463244468971719  
iteration: 49 HingeLoss: 0.9264715674166215  
iteration: 50 HingeLoss: 0.9070351802130716  
iteration: 51 HingeLoss: 0.8880065477219301  
iteration: 52 HingeLoss: 0.8693771156834084  
iteration: 53 HingeLoss: 0.8511385092969805  
iteration: 54 HingeLoss: 0.8332825294565233  
iteration: 55 HingeLoss: 0.8158011490644281  
iteration: 56 HingeLoss: 0.7986865094230514

# Output\_hinge\_train.txt

```

iteration: 57 HingeLoss: 0.7819309167018588
iteration: 58 HingeLoss: 0.7655268384786895
iteration: 59 HingeLoss: 0.7494669003535839
iteration: 60 HingeLoss: 0.7337438826336391
iteration: 61 HingeLoss: 0.7183507170874259
iteration: 62 HingeLoss: 0.7032804837674863
iteration: 63 HingeLoss: 0.6885264078994914
iteration: 64 HingeLoss: 0.6740818568366677
iteration: 65 HingeLoss: 0.6599403370781087
iteration: 66 HingeLoss: 0.6460954913496448
iteration: 67 HingeLoss: 0.6325410957459506
iteration: 68 HingeLoss: 0.619271056932609
iteration: 69 HingeLoss: 0.6062794094068722
iteration: 70 HingeLoss: 0.5935603128158891
iteration: 71 HingeLoss: 0.5811080493311946
iteration: 72 HingeLoss: 0.5689170210782771
iteration: 73 HingeLoss: 0.5569817476200739
iteration: 74 HingeLoss: 0.5452968634932568
iteration: 75 HingeLoss: 0.5338571157962075
iteration: 76 HingeLoss: 0.5226573618275905
iteration: 77 HingeLoss: 0.5116925667744693
iteration: 78 HingeLoss: 0.5009578014489249
iteration: 79 HingeLoss: 0.4904482400721517
iteration: 80 HingeLoss: 0.4801591581050465
iteration: 81 HingeLoss: 0.47008593012430766
iteration: 82 HingeLoss: 0.46022402774308946
iteration: 83 HingeLoss: 0.450569017575282
iteration: 84 HingeLoss: 0.4411165592424965
iteration: 85 HingeLoss: 0.4318624034228615
iteration: 86 HingeLoss: 0.4228023899407556
iteration: 87 HingeLoss: 0.4139324458966127
iteration: 88 HingeLoss: 0.40524858383596385
iteration: 89 HingeLoss: 0.3967468999568901
iteration: 90 HingeLoss: 0.3884235723550812
iteration: 91 HingeLoss: 0.3802748593057097
iteration: 92 HingeLoss: 0.3722970975813529
iteration: 93 HingeLoss: 0.364486700805199
iteration: 94 HingeLoss: 0.3568401578388043
iteration: 95 HingeLoss: 0.34935403120367153
iteration: 96 HingeLoss: 0.34202495553594287
iteration: 97 HingeLoss: 0.3348496360735118
iteration: 98 HingeLoss: 0.32782484717487315
iteration: 99 HingeLoss: 0.32094743086904703
[-0.00237368 -0.00211659 -0.00299142 ... 0.000982 0.00092851
0.0010437 ]

```

## CROSS VALIDATION 9

```

iteration: 0 HingeLoss: 155.7919984743842
iteration: 1 HingeLoss: 2.807930423649534
iteration: 2 HingeLoss: 2.749023032560501
iteration: 3 HingeLoss: 2.691351455826301
iteration: 4 HingeLoss: 2.6348897673773624
iteration: 5 HingeLoss: 2.579612585045453

```

Output\_hinge\_train.txt

iteration: 6 HingeLoss: 2.525495059153213  
iteration: 7 HingeLoss: 2.472512861343055  
iteration: 8 HingeLoss: 2.4206421736404398  
iteration: 9 HingeLoss: 2.369859677746574  
iteration: 10 HingeLoss: 2.320142544555751  
iteration: 11 HingeLoss: 2.271468423892601  
iteration: 12 HingeLoss: 2.223815434464637  
iteration: 13 HingeLoss: 2.177162154025597  
iteration: 14 HingeLoss: 2.131487609745139  
iteration: 15 HingeLoss: 2.0867712687805744  
iteration: 16 HingeLoss: 2.042993029046399  
iteration: 17 HingeLoss: 2.0001332101774576  
iteration: 18 HingeLoss: 1.9581725446817129  
iteration: 19 HingeLoss: 1.9170921692785912  
iteration: 20 HingeLoss: 1.8768736164190676  
iteration: 21 HingeLoss: 1.8374988059836335  
iteration: 22 HingeLoss: 1.798950037154446  
iteration: 23 HingeLoss: 1.7612099804579728  
iteration: 24 HingeLoss: 1.724261669974588  
iteration: 25 HingeLoss: 1.6880884957115996  
iteration: 26 HingeLoss: 1.652674196136279  
iteration: 27 HingeLoss: 1.6180028508655449  
iteration: 28 HingeLoss: 1.5840588735090022  
iteration: 29 HingeLoss: 1.5508270046621355  
iteration: 30 HingeLoss: 1.5182923050464918  
iteration: 31 HingeLoss: 1.4864401487937748  
iteration: 32 HingeLoss: 1.4552562168708372  
iteration: 33 HingeLoss: 1.4247264906425992  
iteration: 34 HingeLoss: 1.3948372455700289  
iteration: 35 HingeLoss: 1.3655750450403057  
iteration: 36 HingeLoss: 1.336926734326446  
iteration: 37 HingeLoss: 1.3088794346736314  
iteration: 38 HingeLoss: 1.281420537509613  
iteration: 39 HingeLoss: 1.2545376987765628  
iteration: 40 HingeLoss: 1.2282188333818445  
iteration: 41 HingeLoss: 1.2024521097652023  
iteration: 42 HingeLoss: 1.1772259445799163  
iteration: 43 HingeLoss: 1.1525289974855537  
iteration: 44 HingeLoss: 1.1283501660499475  
iteration: 45 HingeLoss: 1.1046785807581407  
iteration: 46 HingeLoss: 1.0815036001260283  
iteration: 47 HingeLoss: 1.0588148059165128  
iteration: 48 HingeLoss: 1.0366019984560222  
iteration: 49 HingeLoss: 1.0148551920492748  
iteration: 50 HingeLoss: 0.9935646104902487  
iteration: 51 HingeLoss: 0.9727206826673144  
iteration: 52 HingeLoss: 0.9523140382605775  
iteration: 53 HingeLoss: 0.9323355035294782  
iteration: 54 HingeLoss: 0.9127760971887687  
iteration: 55 HingeLoss: 0.893627026371005  
iteration: 56 HingeLoss: 0.8748796826737391  
iteration: 57 HingeLoss: 0.8565256382896455

# Output\_hinge\_train.txt

```

iteration: 58 HingeLoss: 0.8385566422178222
iteration: 59 HingeLoss: 0.8209646165545834
iteration: 60 HingeLoss: 0.8037416528620631
iteration: 61 HingeLoss: 0.7868800086130032
iteration: 62 HingeLoss: 0.7703721037101243
iteration: 63 HingeLoss: 0.7542105170785188
iteration: 64 HingeLoss: 0.7383879833295303
iteration: 65 HingeLoss: 0.7228973894946228
iteration: 66 HingeLoss: 0.7077317718277669
iteration: 67 HingeLoss: 0.6928843126749132
iteration: 68 HingeLoss: 0.6783483374091348
iteration: 69 HingeLoss: 0.6641173114300726
iteration: 70 HingeLoss: 0.6501848372263277
iteration: 71 HingeLoss: 0.6365446514994781
iteration: 72 HingeLoss: 0.6231906223484368
iteration: 73 HingeLoss: 0.6101167465128728
iteration: 74 HingeLoss: 0.5973171466744661
iteration: 75 HingeLoss: 0.5847860688147781
iteration: 76 HingeLoss: 0.572517879628553
iteration: 77 HingeLoss: 0.5605070639912805
iteration: 78 HingeLoss: 0.5487482224798924
iteration: 79 HingeLoss: 0.5372360689454683
iteration: 80 HingeLoss: 0.5259654281368643
iteration: 81 HingeLoss: 0.5149312333741963
iteration: 82 HingeLoss: 0.5041285242711316
iteration: 83 HingeLoss: 0.49355244450496055
iteration: 84 HingeLoss: 0.48319823963345476
iteration: 85 HingeLoss: 0.473061254957522
iteration: 86 HingeLoss: 0.4631369334287029
iteration: 87 HingeLoss: 0.45342081360056236
iteration: 88 HingeLoss: 0.443908527623063
iteration: 89 HingeLoss: 0.4345957992790103
iteration: 90 HingeLoss: 0.4254784420616953
iteration: 91 HingeLoss: 0.4165523572928626
iteration: 92 HingeLoss: 0.4078135322801627
iteration: 93 HingeLoss: 0.399258038513261
iteration: 94 HingeLoss: 0.3908820298977869
iteration: 95 HingeLoss: 0.38268174102633506
iteration: 96 HingeLoss: 0.3746534854857399
iteration: 97 HingeLoss: 0.3667936541998587
iteration: 98 HingeLoss: 0.3590987138071251
iteration: 99 HingeLoss: 0.3515652050721364
[-9.19018730e-03 -3.05437392e-04 -7.85552020e-04 ... 5.77871737e-03
 2.72679238e-03 -5.79995105e-06]

```

## CROSS VALIDATION 10

```

iteration: 0 HingeLoss: 75.02886492033332
iteration: 1 HingeLoss: 2.8133630714277413
iteration: 2 HingeLoss: 2.7543417091716798
iteration: 3 HingeLoss: 2.696558552264207
iteration: 4 HingeLoss: 2.639987624475245
iteration: 5 HingeLoss: 2.5846034945283787
iteration: 6 HingeLoss: 2.5303812646682884

```

Output\_hinge\_train.txt

iteration: 7 HingeLoss: 2.4772965594680643  
iteration: 8 HingeLoss: 2.4253255148712998  
iteration: 9 HingeLoss: 2.3744447674640896  
iteration: 10 HingeLoss: 2.3246314439720788  
iteration: 11 HingeLoss: 2.275863150977858  
iteration: 12 HingeLoss: 2.228117964854078  
iteration: 13 HingeLoss: 2.181374421907752  
iteration: 14 HingeLoss: 2.1356115087313214  
iteration: 15 HingeLoss: 2.0908086527561474  
iteration: 16 HingeLoss: 2.0469457130041877  
iteration: 17 HingeLoss: 2.0040029710336653  
iteration: 18 HingeLoss: 1.961961122074734  
iteration: 19 HingeLoss: 1.9208012663510587  
iteration: 20 HingeLoss: 1.880504900583495  
iteration: 21 HingeLoss: 1.8410539096719978  
iteration: 22 HingeLoss: 1.8024305585520353  
iteration: 23 HingeLoss: 1.7646174842218507  
iteration: 24 HingeLoss: 1.7275976879369779  
iteration: 25 HingeLoss: 1.691354527568516  
iteration: 26 HingeLoss: 1.6558717101217113  
iteration: 27 HingeLoss: 1.6211332844114954  
iteration: 28 HingeLoss: 1.587123633891681  
iteration: 29 HingeLoss: 1.553827469634595  
iteration: 30 HingeLoss: 1.5212298234579915  
iteration: 31 HingeLoss: 1.4893160411961543  
iteration: 32 HingeLoss: 1.4580717761121624  
iteration: 33 HingeLoss: 1.4274829824483626  
iteration: 34 HingeLoss: 1.3975359091121473  
iteration: 35 HingeLoss: 1.3682170934941889  
iteration: 36 HingeLoss: 1.3395133554163747  
iteration: 37 HingeLoss: 1.3114117912066972  
iteration: 38 HingeLoss: 1.2838997678984503  
iteration: 39 HingeLoss: 1.2569649175511213  
iteration: 40 HingeLoss: 1.2305951316904227  
iteration: 41 HingeLoss: 1.204778555864969  
iteration: 42 HingeLoss: 1.179503584317143  
iteration: 43 HingeLoss: 1.1547588547657675  
iteration: 44 HingeLoss: 1.1305332432982302  
iteration: 45 HingeLoss: 1.1068158593697628  
iteration: 46 HingeLoss: 1.0835960409076308  
iteration: 47 HingeLoss: 1.0608633495180384  
iteration: 48 HingeLoss: 1.038607565793577  
iteration: 49 HingeLoss: 1.0168186847191265  
iteration: 50 HingeLoss: 0.9954869111741346  
iteration: 51 HingeLoss: 0.9746026555292492  
iteration: 52 HingeLoss: 0.9541565293353345  
iteration: 53 HingeLoss: 0.9341393411029215  
iteration: 54 HingeLoss: 0.9145420921702079  
iteration: 55 HingeLoss: 0.8953559726577333  
iteration: 56 HingeLoss: 0.8765723575079323  
iteration: 57 HingeLoss: 0.8581828026077641  
iteration: 58 HingeLoss: 0.8401790409926909

# Output\_hinge\_train.txt

```

iteration: 59 HingeLoss: 0.8225529791302899
iteration: 60 HingeLoss: 0.8052966932818327
iteration: 61 HingeLoss: 0.7884024259401932
iteration: 62 HingeLoss: 0.7718625823424884
iteration: 63 HingeLoss: 0.7556697270558732
iteration: 64 HingeLoss: 0.739816580634971
iteration: 65 HingeLoss: 0.7242960163494169
iteration: 66 HingeLoss: 0.7091010569800643
iteration: 67 HingeLoss: 0.6942248716823963
iteration: 68 HingeLoss: 0.6796607729157408
iteration: 69 HingeLoss: 0.6654022134369112
iteration: 70 HingeLoss: 0.6514427833569126
iteration: 71 HingeLoss: 0.6377762072593979
iteration: 72 HingeLoss: 0.6243963413795737
iteration: 73 HingeLoss: 0.6112971708422915
iteration: 74 HingeLoss: 0.5984728069580814
iteration: 75 HingeLoss: 0.5859174845759084
iteration: 76 HingeLoss: 0.5736255594914701
iteration: 77 HingeLoss: 0.5615915059098607
iteration: 78 HingeLoss: 0.5498099139614702
iteration: 79 HingeLoss: 0.5382754872699923
iteration: 80 HingeLoss: 0.526983040571459
iteration: 81 HingeLoss: 0.5159274973832185
iteration: 82 HingeLoss: 0.5051038877218232
iteration: 83 HingeLoss: 0.4945073458687855
iteration: 84 HingeLoss: 0.48413310818321265
iteration: 85 HingeLoss: 0.473976510960326
iteration: 86 HingeLoss: 0.46403298833490925
iteration: 87 HingeLoss: 0.4542980702287371
iteration: 88 HingeLoss: 0.44476738034106733
iteration: 89 HingeLoss: 0.43543663418128803
iteration: 90 HingeLoss: 0.426301637142839
iteration: 91 HingeLoss: 0.41735828261754104
iteration: 92 HingeLoss: 0.4086025501494823
iteration: 93 HingeLoss: 0.4000305036276358
iteration: 94 HingeLoss: 0.3916382895163944
iteration: 95 HingeLoss: 0.383422135123225
iteration: 96 HingeLoss: 0.3753783469026679
iteration: 97 HingeLoss: 0.3675033087959153
iteration: 98 HingeLoss: 0.3597934806052234
iteration: 99 HingeLoss: 0.3522453964024285
[-0.00668681 0.00097797 -0.00089519 ... 0.0060311 0.00255303
0.00069234]

```

## CROSS VALIDATION 11

```

iteration: 0 HingeLoss: 175.01364511660358
iteration: 1 HingeLoss: 2.8079956490057474
iteration: 2 HingeLoss: 2.749086889558177
iteration: 3 HingeLoss: 2.691413973172145
iteration: 4 HingeLoss: 2.634950973175844
iteration: 5 HingeLoss: 2.5796725068114394
iteration: 6 HingeLoss: 2.525553723824339
iteration: 7 HingeLoss: 2.4725702952918334

```

Output\_hinge\_train.txt

```

iteration: 8 HingeLoss: 2.420698402686114
iteration: 9 HingeLoss: 2.3699147271667287
iteration: 10 HingeLoss: 2.3201964390976744
iteration: 11 HingeLoss: 2.271521187784408
iteration: 12 HingeLoss: 2.2238670914261642
iteration: 13 HingeLoss: 2.1772127272790622
iteration: 14 HingeLoss: 2.1315371220255837
iteration: 15 HingeLoss: 2.086819742346085
iteration: 16 HingeLoss: 2.0430404856881075
iteration: 17 HingeLoss: 2.0001796712293465
iteration: 18 HingeLoss: 1.958218031030192
iteration: 19 HingeLoss: 1.9171367013719014
iteration: 20 HingeLoss: 1.8769172142764654
iteration: 21 HingeLoss: 1.8375414892043969
iteration: 22 HingeLoss: 1.7989918249266765
iteration: 23 HingeLoss: 1.7612508915672263
iteration: 24 HingeLoss: 1.7243017228123225
iteration: 25 HingeLoss: 1.688127708283437
iteration: 26 HingeLoss: 1.652712586070103
iteration: 27 HingeLoss: 1.6180404354194255
iteration: 28 HingeLoss: 1.5840956695789536
iteration: 29 HingeLoss: 1.5508630287897103
iteration: 30 HingeLoss: 1.5183275734262205
iteration: 31 HingeLoss: 1.4864746772804416
iteration: 32 HingeLoss: 1.4552900209866104
iteration: 33 HingeLoss: 1.4247595855840114
iteration: 34 HingeLoss: 1.3948696462148011
iteration: 35 HingeLoss: 1.365606765954043
iteration: 36 HingeLoss: 1.3369577897691816
iteration: 37 HingeLoss: 1.3089098386062394
iteration: 38 HingeLoss: 1.2814503036000815
iteration: 39 HingeLoss: 1.2545668404061399
iteration: 40 HingeLoss: 1.228247363651056
iteration: 41 HingeLoss: 1.2024800414997376
iteration: 42 HingeLoss: 1.1772532903363968
iteration: 43 HingeLoss: 1.1525557695571738
iteration: 44 HingeLoss: 1.1283763764720056
iteration: 45 HingeLoss: 1.1047042413134462
iteration: 46 HingeLoss: 1.0815287223502004
iteration: 47 HingeLoss: 1.0588394011031668
iteration: 48 HingeLoss: 1.036626077661843
iteration: 49 HingeLoss: 1.0148787660989906
iteration: 50 HingeLoss: 0.9935876899814975
iteration: 51 HingeLoss: 0.9727432779754062
iteration: 52 HingeLoss: 0.9523361595431594
iteration: 53 HingeLoss: 0.9323571607311015
iteration: 54 HingeLoss: 0.9127973000453573
iteration: 55 HingeLoss: 0.8936477844142332
iteration: 56 HingeLoss: 0.874900005235319
iteration: 57 HingeLoss: 0.8565455345055176
iteration: 58 HingeLoss: 0.8385761210322663
iteration: 59 HingeLoss: 0.8209836867242368

```

# Output\_hinge\_train.txt

```

iteration: 60 HingeLoss: 0.8037603229598584
iteration: 61 HingeLoss: 0.7868982870320217
iteration: 62 HingeLoss: 0.7703899986673703
iteration: 63 HingeLoss: 0.7542280366186115
iteration: 64 HingeLoss: 0.7384051353283229
iteration: 65 HingeLoss: 0.7229141816627398
iteration: 66 HingeLoss: 0.7077482117140734
iteration: 67 HingeLoss: 0.6929004076699061
iteration: 68 HingeLoss: 0.6783640947482668
iteration: 69 HingeLoss: 0.664132738197004
iteration: 70 HingeLoss: 0.6501999403561117
iteration: 71 HingeLoss: 0.6365594377816775
iteration: 72 HingeLoss: 0.6232050984301766
iteration: 73 HingeLoss: 0.6101309189018282
iteration: 74 HingeLoss: 0.5973310217417882
iteration: 75 HingeLoss: 0.5847996527979591
iteration: 76 HingeLoss: 0.5725311786342274
iteration: 77 HingeLoss: 0.5605200839979735
iteration: 78 HingeLoss: 0.5487609693407055
iteration: 79 HingeLoss: 0.537248548390711
iteration: 80 HingeLoss: 0.525977645776631
iteration: 81 HingeLoss: 0.5149431947008871
iteration: 82 HingeLoss: 0.5041402346619217
iteration: 83 HingeLoss: 0.4935639092242181
iteration: 84 HingeLoss: 0.4832094638351072
iteration: 85 HingeLoss: 0.47307224368737266
iteration: 86 HingeLoss: 0.46314769162669944
iteration: 87 HingeLoss: 0.4534313461030177
iteration: 88 HingeLoss: 0.44391883916482905
iteration: 89 HingeLoss: 0.4346058944956077
iteration: 90 HingeLoss: 0.4254883254913957
iteration: 91 HingeLoss: 0.41656203337872877
iteration: 92 HingeLoss: 0.4078230053720482
iteration: 93 HingeLoss: 0.39926731286976347
iteration: 94 HingeLoss: 0.3908911096881629
iteration: 95 HingeLoss: 0.3826906303323751
iteration: 96 HingeLoss: 0.3746621883036022
iteration: 97 HingeLoss: 0.3668021744418672
iteration: 98 HingeLoss: 0.35910705530352643
iteration: 99 HingeLoss: 0.3515733715728229
[-9.19039976e-03 -3.05501077e-04 -7.85489534e-04 ... 5.77876394e-03
 2.72691647e-03 -5.86938748e-06]

```

## CROSS VALIDATION 12

```

iteration: 0 HingeLoss: 122.0312769736441
iteration: 1 HingeLoss: 37.18034110443505
iteration: 2 HingeLoss: 15.715772503392074
iteration: 3 HingeLoss: 3.089488501344025
iteration: 4 HingeLoss: 3.0246743215192993
iteration: 5 HingeLoss: 2.961219874188972
iteration: 6 HingeLoss: 2.8990966336128245
iteration: 7 HingeLoss: 2.8382766724902972
iteration: 8 HingeLoss: 2.7787326494058653

```



# Output\_hinge\_train.txt

```

iteration: 9 HingeLoss: 2.720437796537799
iteration: 10 HingeLoss: 2.6633659076247707
iteration: 11 HingeLoss: 2.607491326184917
iteration: 12 HingeLoss: 2.5527889339820513
iteration: 13 HingeLoss: 2.4992341397338422
iteration: 14 HingeLoss: 2.446802868056885
iteration: 15 HingeLoss: 2.395471548643686
iteration: 16 HingeLoss: 2.345217105666712
iteration: 17 HingeLoss: 2.2960169474047283
iteration: 18 HingeLoss: 2.247848956086757
iteration: 19 HingeLoss: 2.2006914779491136
iteration: 20 HingeLoss: 2.154523313501023
iteration: 21 HingeLoss: 2.1093237079944567
iteration: 22 HingeLoss: 2.065072342093908
iteration: 23 HingeLoss: 2.0217493227418966
iteration: 24 HingeLoss: 1.9793351742161105
iteration: 25 HingeLoss: 1.937810829374161
iteration: 26 HingeLoss: 1.8971576210820045
iteration: 27 HingeLoss: 1.857357273822202
iteration: 28 HingeLoss: 1.8183918954782117
iteration: 29 HingeLoss: 1.7802439692910519
iteration: 30 HingeLoss: 1.7428963459846962
iteration: 31 HingeLoss: 1.7063322360566717
iteration: 32 HingeLoss: 1.670535202230395
iteration: 33 HingeLoss: 1.6354891520658459
iteration: 34 HingeLoss: 1.6011783307252683
iteration: 35 HingeLoss: 1.5675873138906256
iteration: 36 HingeLoss: 1.5347010008296555
iteration: 37 HingeLoss: 1.5025046076073827
iteration: 38 HingeLoss: 1.4709836604400506
iteration: 39 HingeLoss: 1.4401239891884763
iteration: 40 HingeLoss: 1.4099117209879122
iteration: 41 HingeLoss: 1.3803332740115448
iteration: 42 HingeLoss: 1.3513753513648292
iteration: 43 HingeLoss: 1.3230249351079113
iteration: 44 HingeLoss: 1.295269280403459
iteration: 45 HingeLoss: 1.2680959097872577
iteration: 46 HingeLoss: 1.2414926075590094
iteration: 47 HingeLoss: 1.2154474142908054
iteration: 48 HingeLoss: 1.1899486214508024
iteration: 49 HingeLoss: 1.1649847661396895
iteration: 50 HingeLoss: 1.140544625937583
iteration: 51 HingeLoss: 1.1166172138590185
iteration: 52 HingeLoss: 1.093191773413793
iteration: 53 HingeLoss: 1.0702577737714158
iteration: 54 HingeLoss: 1.0478049050270084
iteration: 55 HingeLoss: 1.025823073566523
iteration: 56 HingeLoss: 1.0043023975291896
iteration: 57 HingeLoss: 0.9832332023651532
iteration: 58 HingeLoss: 0.9626060164863216
iteration: 59 HingeLoss: 0.9424115670084335
iteration: 60 HingeLoss: 0.9226407755824697

```

# Output\_hinge\_train.txt

```

iteration: 61 HingeLoss: 0.9032847543135074
iteration: 62 HingeLoss: 0.8843348017652005
iteration: 63 HingeLoss: 0.8657823990480715
iteration: 64 HingeLoss: 0.8476192059898765
iteration: 65 HingeLoss: 0.8298370573863068
iteration: 66 HingeLoss: 0.8124279593303468
iteration: 67 HingeLoss: 0.7953840856186422
iteration: 68 HingeLoss: 0.7786977742332502
iteration: 69 HingeLoss: 0.7623615238972119
iteration: 70 HingeLoss: 0.7463679907023709
iteration: 71 HingeLoss: 0.7307099848079451
iteration: 72 HingeLoss: 0.7153804672083617
iteration: 73 HingeLoss: 0.7003725465688871
iteration: 74 HingeLoss: 0.6856794761276572
iteration: 75 HingeLoss: 0.671294650662688
iteration: 76 HingeLoss: 0.6572116035225222
iteration: 77 HingeLoss: 0.643424003719165
iteration: 78 HingeLoss: 0.62992565308201
iteration: 79 HingeLoss: 0.6167104834714727
iteration: 80 HingeLoss: 0.6037725540510767
iteration: 81 HingeLoss: 0.5911060486167704
iteration: 82 HingeLoss: 0.5787052729822715
iteration: 83 HingeLoss: 0.5665646524192645
iteration: 84 HingeLoss: 0.5546787291512997
iteration: 85 HingeLoss: 0.5430421599002656
iteration: 86 HingeLoss: 0.5316497134843389
iteration: 87 HingeLoss: 0.520496268466321
iteration: 88 HingeLoss: 0.5095768108513149
iteration: 89 HingeLoss: 0.4988864318326973
iteration: 90 HingeLoss: 0.48842032558538373
iteration: 91 HingeLoss: 0.47817378710538255
iteration: 92 HingeLoss: 0.4681422100946779
iteration: 93 HingeLoss: 0.4583210848904826
iteration: 94 HingeLoss: 0.4487059964379337
iteration: 95 HingeLoss: 0.43929262230531924
iteration: 96 HingeLoss: 0.4300767307409434
iteration: 97 HingeLoss: 0.42105417877075574
iteration: 98 HingeLoss: 0.4122209103358908
iteration: 99 HingeLoss: 0.4035729544692803
[-1.52324524e-02 -3.29202836e-03 -7.42096656e-03 ... 7.62463651e-03
 3.72922480e-03 1.20186388e-05]

```

## CROSS VALIDATION 13

```

iteration: 0 HingeLoss: 175.0806860531506
iteration: 1 HingeLoss: 2.808051906575052
iteration: 2 HingeLoss: 2.749141966903567
iteration: 3 HingeLoss: 2.6914678950534614
iteration: 4 HingeLoss: 2.6350037638334936
iteration: 5 HingeLoss: 2.57972418997729
iteration: 6 HingeLoss: 2.5256043227323905
iteration: 7 HingeLoss: 2.4726198326886584
iteration: 8 HingeLoss: 2.4207469008410905
iteration: 9 HingeLoss: 2.3699622078820415

```

# Output\_hinge\_train.txt

```

iteration: 10 HingeLoss: 2.3202429237181263
iteration: 11 HingeLoss: 2.271566697207009
iteration: 12 HingeLoss: 2.2239116461095256
iteration: 13 HingeLoss: 2.1772563472525976
iteration: 14 HingeLoss: 2.131579826898511
iteration: 15 HingeLoss: 2.08686155131624
iteration: 16 HingeLoss: 2.0430814175505776
iteration: 17 HingeLoss: 2.000219744384914
iteration: 18 HingeLoss: 1.9582572634936168
iteration: 19 HingeLoss: 1.9171751107800081
iteration: 20 HingeLoss: 1.8769548178960798
iteration: 21 HingeLoss: 1.8375783039401015
iteration: 22 HingeLoss: 1.7990278673284188
iteration: 23 HingeLoss: 1.761286177837749
iteration: 24 HingeLoss: 1.724336268814453
iteration: 25 HingeLoss: 1.6881615295472194
iteration: 26 HingeLoss: 1.6527456977997765
iteration: 27 HingeLoss: 1.6180728525002595
iteration: 28 HingeLoss: 1.584127406583941
iteration: 29 HingeLoss: 1.5508940999861196
iteration: 30 HingeLoss: 1.5183579927820052
iteration: 31 HingeLoss: 1.486504458470526
iteration: 32 HingeLoss: 1.45531917739903
iteration: 33 HingeLoss: 1.424788130325937
iteration: 34 HingeLoss: 1.3948975921184283
iteration: 35 HingeLoss: 1.3656341255823627
iteration: 36 HingeLoss: 1.336984575421625
iteration: 37 HingeLoss: 1.3089360623242088
iteration: 38 HingeLoss: 1.2814759771723647
iteration: 39 HingeLoss: 1.2545919753742076
iteration: 40 HingeLoss: 1.2282719713142516
iteration: 41 HingeLoss: 1.2025041329203559
iteration: 42 HingeLoss: 1.1772768763446568
iteration: 43 HingeLoss: 1.1525788607560892
iteration: 44 HingeLoss: 1.1283989832421493
iteration: 45 HingeLoss: 1.1047263738176187
iteration: 46 HingeLoss: 1.0815503905379964
iteration: 47 HingeLoss: 1.0588606147154498
iteration: 48 HingeLoss: 1.0366468462351228
iteration: 49 HingeLoss: 1.0148990989697133
iteration: 50 HingeLoss: 0.9936075962902372
iteration: 51 HingeLoss: 0.97276276667098
iteration: 52 HingeLoss: 0.9523552393866469
iteration: 53 HingeLoss: 0.9323758402997838
iteration: 54 HingeLoss: 0.9128155877365747
iteration: 55 HingeLoss: 0.8936656884491573
iteration: 56 HingeLoss: 0.87491753366265
iteration: 57 HingeLoss: 0.8565626952051035
iteration: 58 HingeLoss: 0.838592921718643
iteration: 59 HingeLoss: 0.8210001349500988
iteration: 60 HingeLoss: 0.8037764261194522
iteration: 61 HingeLoss: 0.7869140523644699

```

# Output\_hinge\_train.txt

```

iteration: 62 HingeLoss: 0.7704054332599267
iteration: 63 HingeLoss: 0.7542431474098471
iteration: 64 HingeLoss: 0.7384199291112448
iteration: 65 HingeLoss: 0.7229286650878445
iteration: 66 HingeLoss: 0.7077623912923379
iteration: 67 HingeLoss: 0.6929142897757133
iteration: 68 HingeLoss: 0.6783776856222722
iteration: 69 HingeLoss: 0.6641460439489416
iteration: 70 HingeLoss: 0.6502129669675383
iteration: 71 HingeLoss: 0.6365721911086638
iteration: 72 HingeLoss: 0.6232175842059391
iteration: 73 HingeLoss: 0.6101431427393071
iteration: 74 HingeLoss: 0.59734298913617
iteration: 75 HingeLoss: 0.5848113691291462
iteration: 76 HingeLoss: 0.5725426491692595
iteration: 77 HingeLoss: 0.5605313138933914
iteration: 78 HingeLoss: 0.5487719636448727
iteration: 79 HingeLoss: 0.5372593120460807
iteration: 80 HingeLoss: 0.5259881836219696
iteration: 81 HingeLoss: 0.5149535114734486
iteration: 82 HingeLoss: 0.5041503349995778
iteration: 83 HingeLoss: 0.4935737976675425
iteration: 84 HingeLoss: 0.48321914482941725
iteration: 85 HingeLoss: 0.4730817215847283
iteration: 86 HingeLoss: 0.463156970687858
iteration: 87 HingeLoss: 0.4534404304993512
iteration: 88 HingeLoss: 0.4439277329801983
iteration: 89 HingeLoss: 0.43461460172819844
iteration: 90 HingeLoss: 0.42549685005551585
iteration: 91 HingeLoss: 0.4165703791065689
iteration: 92 HingeLoss: 0.4078311760154028
iteration: 93 HingeLoss: 0.3992753121017185
iteration: 94 HingeLoss: 0.39089894110474704
iteration: 95 HingeLoss: 0.3826982974541763
iteration: 96 HingeLoss: 0.37466969457735033
iteration: 97 HingeLoss: 0.3668095232419827
iteration: 98 HingeLoss: 0.35911424993363866
iteration: 99 HingeLoss: 0.3515804152672546
[-9.19001124e-03 -3.05322254e-04 -7.85485875e-04 ... 5.77876379e-03
 2.72688908e-03 -5.79992327e-06]

```

## CROSS VALIDATION 14

```

iteration: 0 HingeLoss: 175.0806860531506
iteration: 1 HingeLoss: 2.808051906575052
iteration: 2 HingeLoss: 2.749141966903567
iteration: 3 HingeLoss: 2.6914678950534614
iteration: 4 HingeLoss: 2.6350037638334936
iteration: 5 HingeLoss: 2.57972418997729
iteration: 6 HingeLoss: 2.5256043227323905
iteration: 7 HingeLoss: 2.4726198326886584
iteration: 8 HingeLoss: 2.4207469008410905
iteration: 9 HingeLoss: 2.3699622078820415
iteration: 10 HingeLoss: 2.3202429237181263

```

# Output\_hinge\_train.txt

```

iteration: 11 HingeLoss: 2.271566697207009
iteration: 12 HingeLoss: 2.2239116461095256
iteration: 13 HingeLoss: 2.1772563472525976
iteration: 14 HingeLoss: 2.131579826898511
iteration: 15 HingeLoss: 2.08686155131624
iteration: 16 HingeLoss: 2.0430814175505776
iteration: 17 HingeLoss: 2.000219744384914
iteration: 18 HingeLoss: 1.9582572634936168
iteration: 19 HingeLoss: 1.9171751107800081
iteration: 20 HingeLoss: 1.8769548178960798
iteration: 21 HingeLoss: 1.8375783039401015
iteration: 22 HingeLoss: 1.7990278673284188
iteration: 23 HingeLoss: 1.761286177837749
iteration: 24 HingeLoss: 1.724336268814453
iteration: 25 HingeLoss: 1.6881615295472194
iteration: 26 HingeLoss: 1.6527456977997765
iteration: 27 HingeLoss: 1.6180728525002595
iteration: 28 HingeLoss: 1.584127406583941
iteration: 29 HingeLoss: 1.5508940999861196
iteration: 30 HingeLoss: 1.5183579927820052
iteration: 31 HingeLoss: 1.486504458470526
iteration: 32 HingeLoss: 1.45531917739903
iteration: 33 HingeLoss: 1.424788130325937
iteration: 34 HingeLoss: 1.3948975921184283
iteration: 35 HingeLoss: 1.3656341255823627
iteration: 36 HingeLoss: 1.336984575421625
iteration: 37 HingeLoss: 1.3089360623242088
iteration: 38 HingeLoss: 1.2814759771723647
iteration: 39 HingeLoss: 1.2545919753742076
iteration: 40 HingeLoss: 1.2282719713142516
iteration: 41 HingeLoss: 1.2025041329203559
iteration: 42 HingeLoss: 1.1772768763446568
iteration: 43 HingeLoss: 1.1525788607560892
iteration: 44 HingeLoss: 1.1283989832421493
iteration: 45 HingeLoss: 1.1047263738176187
iteration: 46 HingeLoss: 1.0815503905379964
iteration: 47 HingeLoss: 1.0588606147154498
iteration: 48 HingeLoss: 1.0366468462351228
iteration: 49 HingeLoss: 1.0148990989697133
iteration: 50 HingeLoss: 0.9936075962902372
iteration: 51 HingeLoss: 0.97276276667098
iteration: 52 HingeLoss: 0.9523552393866469
iteration: 53 HingeLoss: 0.9323758402997838
iteration: 54 HingeLoss: 0.9128155877365747
iteration: 55 HingeLoss: 0.8936656884491573
iteration: 56 HingeLoss: 0.87491753366265
iteration: 57 HingeLoss: 0.8565626952051035
iteration: 58 HingeLoss: 0.838592921718643
iteration: 59 HingeLoss: 0.8210001349500988
iteration: 60 HingeLoss: 0.8037764261194522
iteration: 61 HingeLoss: 0.7869140523644699
iteration: 62 HingeLoss: 0.7704054332599267

```

# Output\_hinge\_train.txt

```

iteration: 63 HingeLoss: 0.7542431474098471
iteration: 64 HingeLoss: 0.7384199291112448
iteration: 65 HingeLoss: 0.7229286650878445
iteration: 66 HingeLoss: 0.7077623912923379
iteration: 67 HingeLoss: 0.6929142897757133
iteration: 68 HingeLoss: 0.6783776856222722
iteration: 69 HingeLoss: 0.6641460439489416
iteration: 70 HingeLoss: 0.6502129669675383
iteration: 71 HingeLoss: 0.6365721911086638
iteration: 72 HingeLoss: 0.6232175842059391
iteration: 73 HingeLoss: 0.6101431427393071
iteration: 74 HingeLoss: 0.59734298913617
iteration: 75 HingeLoss: 0.5848113691291462
iteration: 76 HingeLoss: 0.5725426491692595
iteration: 77 HingeLoss: 0.5605313138933914
iteration: 78 HingeLoss: 0.5487719636448727
iteration: 79 HingeLoss: 0.5372593120460807
iteration: 80 HingeLoss: 0.5259881836219696
iteration: 81 HingeLoss: 0.5149535114734486
iteration: 82 HingeLoss: 0.5041503349995778
iteration: 83 HingeLoss: 0.4935737976675425
iteration: 84 HingeLoss: 0.48321914482941725
iteration: 85 HingeLoss: 0.4730817215847283
iteration: 86 HingeLoss: 0.463156970687858
iteration: 87 HingeLoss: 0.4534404304993512
iteration: 88 HingeLoss: 0.4439277329801983
iteration: 89 HingeLoss: 0.43461460172819844
iteration: 90 HingeLoss: 0.42549685005551585
iteration: 91 HingeLoss: 0.4165703791065689
iteration: 92 HingeLoss: 0.4078311760154028
iteration: 93 HingeLoss: 0.3992753121017185
iteration: 94 HingeLoss: 0.39089894110474704
iteration: 95 HingeLoss: 0.3826982974541763
iteration: 96 HingeLoss: 0.37466969457735033
iteration: 97 HingeLoss: 0.3668095232419827
iteration: 98 HingeLoss: 0.35911424993363866
iteration: 99 HingeLoss: 0.3515804152672546
[-9.19001124e-03 -3.05322254e-04 -7.85485875e-04 ... 5.77876379e-03
 2.72688908e-03 -5.79992327e-06]

```

## CROSS VALIDATION 15

```

iteration: 0 HingeLoss: 175.0806860531506
iteration: 1 HingeLoss: 2.808051906575052
iteration: 2 HingeLoss: 2.749141966903567
iteration: 3 HingeLoss: 2.6914678950534614
iteration: 4 HingeLoss: 2.6350037638334936
iteration: 5 HingeLoss: 2.57972418997729
iteration: 6 HingeLoss: 2.5256043227323905
iteration: 7 HingeLoss: 2.4726198326886584
iteration: 8 HingeLoss: 2.4207469008410905
iteration: 9 HingeLoss: 2.3699622078820415
iteration: 10 HingeLoss: 2.3202429237181263
iteration: 11 HingeLoss: 2.271566697207009

```

# Output\_hinge\_train.txt

```

iteration: 12 HingeLoss: 2.2239116461095256
iteration: 13 HingeLoss: 2.1772563472525976
iteration: 14 HingeLoss: 2.131579826898511
iteration: 15 HingeLoss: 2.08686155131624
iteration: 16 HingeLoss: 2.0430814175505776
iteration: 17 HingeLoss: 2.000219744384914
iteration: 18 HingeLoss: 1.9582572634936168
iteration: 19 HingeLoss: 1.9171751107800081
iteration: 20 HingeLoss: 1.8769548178960798
iteration: 21 HingeLoss: 1.8375783039401015
iteration: 22 HingeLoss: 1.7990278673284188
iteration: 23 HingeLoss: 1.761286177837749
iteration: 24 HingeLoss: 1.724336268814453
iteration: 25 HingeLoss: 1.6881615295472194
iteration: 26 HingeLoss: 1.6527456977997765
iteration: 27 HingeLoss: 1.6180728525002595
iteration: 28 HingeLoss: 1.584127406583941
iteration: 29 HingeLoss: 1.5508940999861196
iteration: 30 HingeLoss: 1.5183579927820052
iteration: 31 HingeLoss: 1.486504458470526
iteration: 32 HingeLoss: 1.45531917739903
iteration: 33 HingeLoss: 1.424788130325937
iteration: 34 HingeLoss: 1.3948975921184283
iteration: 35 HingeLoss: 1.3656341255823627
iteration: 36 HingeLoss: 1.336984575421625
iteration: 37 HingeLoss: 1.3089360623242088
iteration: 38 HingeLoss: 1.2814759771723647
iteration: 39 HingeLoss: 1.2545919753742076
iteration: 40 HingeLoss: 1.2282719713142516
iteration: 41 HingeLoss: 1.2025041329203559
iteration: 42 HingeLoss: 1.1772768763446568
iteration: 43 HingeLoss: 1.1525788607560892
iteration: 44 HingeLoss: 1.1283989832421493
iteration: 45 HingeLoss: 1.1047263738176187
iteration: 46 HingeLoss: 1.0815503905379964
iteration: 47 HingeLoss: 1.0588606147154498
iteration: 48 HingeLoss: 1.0366468462351228
iteration: 49 HingeLoss: 1.0148990989697133
iteration: 50 HingeLoss: 0.9936075962902372
iteration: 51 HingeLoss: 0.97276276667098
iteration: 52 HingeLoss: 0.9523552393866469
iteration: 53 HingeLoss: 0.9323758402997838
iteration: 54 HingeLoss: 0.9128155877365747
iteration: 55 HingeLoss: 0.8936656884491573
iteration: 56 HingeLoss: 0.87491753366265
iteration: 57 HingeLoss: 0.8565626952051035
iteration: 58 HingeLoss: 0.838592921718643
iteration: 59 HingeLoss: 0.8210001349500988
iteration: 60 HingeLoss: 0.8037764261194522
iteration: 61 HingeLoss: 0.7869140523644699
iteration: 62 HingeLoss: 0.7704054332599267
iteration: 63 HingeLoss: 0.7542431474098471

```

# Output\_hinge\_train.txt

```

iteration: 64 HingeLoss: 0.7384199291112448
iteration: 65 HingeLoss: 0.7229286650878445
iteration: 66 HingeLoss: 0.7077623912923379
iteration: 67 HingeLoss: 0.6929142897757133
iteration: 68 HingeLoss: 0.6783776856222722
iteration: 69 HingeLoss: 0.6641460439489416
iteration: 70 HingeLoss: 0.6502129669675383
iteration: 71 HingeLoss: 0.6365721911086638
iteration: 72 HingeLoss: 0.6232175842059391
iteration: 73 HingeLoss: 0.6101431427393071
iteration: 74 HingeLoss: 0.59734298913617
iteration: 75 HingeLoss: 0.5848113691291462
iteration: 76 HingeLoss: 0.5725426491692595
iteration: 77 HingeLoss: 0.5605313138933914
iteration: 78 HingeLoss: 0.5487719636448727
iteration: 79 HingeLoss: 0.5372593120460807
iteration: 80 HingeLoss: 0.5259881836219696
iteration: 81 HingeLoss: 0.5149535114734486
iteration: 82 HingeLoss: 0.5041503349995778
iteration: 83 HingeLoss: 0.4935737976675425
iteration: 84 HingeLoss: 0.48321914482941725
iteration: 85 HingeLoss: 0.4730817215847283
iteration: 86 HingeLoss: 0.463156970687858
iteration: 87 HingeLoss: 0.4534404304993512
iteration: 88 HingeLoss: 0.4439277329801983
iteration: 89 HingeLoss: 0.43461460172819844
iteration: 90 HingeLoss: 0.42549685005551585
iteration: 91 HingeLoss: 0.4165703791065689
iteration: 92 HingeLoss: 0.4078311760154028
iteration: 93 HingeLoss: 0.3992753121017185
iteration: 94 HingeLoss: 0.39089894110474704
iteration: 95 HingeLoss: 0.3826982974541763
iteration: 96 HingeLoss: 0.37466969457735033
iteration: 97 HingeLoss: 0.3668095232419827
iteration: 98 HingeLoss: 0.35911424993363866
iteration: 99 HingeLoss: 0.3515804152672546
[-9.19001124e-03 -3.05322254e-04 -7.85485875e-04 ... 5.77876379e-03
 2.72688908e-03 -5.79992327e-06]

```

## CROSS VALIDATION 16

```

iteration: 0 HingeLoss: 175.0806860531506
iteration: 1 HingeLoss: 2.5743381541171133
iteration: 2 HingeLoss: 2.520331280170822
iteration: 3 HingeLoss: 2.467457412946585
iteration: 4 HingeLoss: 2.4156927831695185
iteration: 5 HingeLoss: 2.3650141202188295
iteration: 6 HingeLoss: 2.315398641666573
iteration: 7 HingeLoss: 2.2668240430358857
iteration: 8 HingeLoss: 2.219268487774093
iteration: 9 HingeLoss: 2.1727105974361405
iteration: 10 HingeLoss: 2.127129442073997
iteration: 11 HingeLoss: 2.0825045308276624
iteration: 12 HingeLoss: 2.0388158027135552

```



# Output\_hinge\_train.txt

```

iteration: 13 HingeLoss: 1.996043617606188
iteration: 14 HingeLoss: 1.9541687474089873
iteration: 15 HingeLoss: 1.9131723674103804
iteration: 16 HingeLoss: 1.873036047821202
iteration: 17 HingeLoss: 1.833741745489646
iteration: 18 HingeLoss: 1.7952717957900217
iteration: 19 HingeLoss: 1.7576089046816792
iteration: 20 HingeLoss: 1.7207361409345354
iteration: 21 HingeLoss: 1.6846369285176828
iteration: 22 HingeLoss: 1.6492950391477046
iteration: 23 HingeLoss: 1.6146945849932888
iteration: 24 HingeLoss: 1.5808200115329127
iteration: 25 HingeLoss: 1.547656090562354
iteration: 26 HingeLoss: 1.5151879133489086
iteration: 27 HingeLoss: 1.4834008839292079
iteration: 28 HingeLoss: 1.4522807125476607
iteration: 29 HingeLoss: 1.4218134092325334
iteration: 30 HingeLoss: 1.3919852775068076
iteration: 31 HingeLoss: 1.3627829082309715
iteration: 32 HingeLoss: 1.334193173574985
iteration: 33 HingeLoss: 1.306203221116708
iteration: 34 HingeLoss: 1.278800468064135
iteration: 35 HingeLoss: 1.2519725955988397
iteration: 36 HingeLoss: 1.2257075433380937
iteration: 37 HingeLoss: 1.1999935039131602
iteration: 38 HingeLoss: 1.1748189176613273
iteration: 39 HingeLoss: 1.150172467429302
iteration: 40 HingeLoss: 1.1260430734856173
iteration: 41 HingeLoss: 1.102419888539781
iteration: 42 HingeLoss: 1.079292292865905
iteration: 43 HingeLoss: 1.0566498895286476
iteration: 44 HingeLoss: 1.0344824997092987
iteration: 45 HingeLoss: 1.012780158129933
iteration: 46 HingeLoss: 0.9915331085735448
iteration: 47 HingeLoss: 0.970731799498175
iteration: 48 HingeLoss: 0.9503668797430495
iteration: 49 HingeLoss: 0.9304291943247892
iteration: 50 HingeLoss: 0.9109097803218211
iteration: 51 HingeLoss: 0.8917998628451271
iteration: 52 HingeLoss: 0.8730908510935165
iteration: 53 HingeLoss: 0.8547743344916644
iteration: 54 HingeLoss: 0.8368420789091616
iteration: 55 HingeLoss: 0.8192860229588899
iteration: 56 HingeLoss: 0.8020982743730509
iteration: 57 HingeLoss: 0.7852711064552216
iteration: 58 HingeLoss: 0.7687969546068462
iteration: 59 HingeLoss: 0.7526684129265929
iteration: 60 HingeLoss: 0.7368782308810561
iteration: 61 HingeLoss: 0.721419310045301
iteration: 62 HingeLoss: 0.7062847009117942
iteration: 63 HingeLoss: 0.6914675997662693
iteration: 64 HingeLoss: 0.6769613456291442

```

# Output\_hinge\_train.txt

```

iteration: 65 HingeLoss: 0.6627594172610958
iteration: 66 HingeLoss: 0.6488554302314617
iteration: 67 HingeLoss: 0.6352431340481364
iteration: 68 HingeLoss: 0.6219164093476858
iteration: 69 HingeLoss: 0.6088692651444064
iteration: 70 HingeLoss: 0.5960958361370962
iteration: 71 HingeLoss: 0.5835903800723294
iteration: 72 HingeLoss: 0.5713472751630431
iteration: 73 HingeLoss: 0.5593610175612833
iteration: 74 HingeLoss: 0.5476262188839657
iteration: 75 HingeLoss: 0.5361376037905482
iteration: 76 HingeLoss: 0.5248900076115168
iteration: 77 HingeLoss: 0.5138783740266256
iteration: 78 HingeLoss: 0.5030977527918451
iteration: 79 HingeLoss: 0.4925432975139954
iteration: 80 HingeLoss: 0.4822102634720663
iteration: 81 HingeLoss: 0.4720940054842438
iteration: 82 HingeLoss: 0.4621899758196828
iteration: 83 HingeLoss: 0.4524937221540903
iteration: 84 HingeLoss: 0.44300088556819683
iteration: 85 HingeLoss: 0.4337071985882198
iteration: 86 HingeLoss: 0.42460848326743234
iteration: 87 HingeLoss: 0.4157006493079832
iteration: 88 HingeLoss: 0.4069796922221154
iteration: 89 HingeLoss: 0.39844169153196207
iteration: 90 HingeLoss: 0.39008280900710857
iteration: 91 HingeLoss: 0.3818992869391278
iteration: 92 HingeLoss: 0.373887446452316
iteration: 93 HingeLoss: 0.3660436858498649
iteration: 94 HingeLoss: 0.3583644789947307
iteration: 95 HingeLoss: 0.35084637372447186
iteration: 96 HingeLoss: 0.343485990299339
iteration: 97 HingeLoss: 0.33628001988292516
iteration: 98 HingeLoss: 0.3292252230546888
iteration: 99 HingeLoss: 0.3223184283536826
[-5.81287875e-03  4.94293245e-04 -5.90491364e-05 ...  5.72667736e-03
 2.74194929e-03  3.45433366e-04]

```

## CROSS VALIDATION 17

```

iteration: 0 HingeLoss: 175.0806860531506
iteration: 1 HingeLoss: 2.8081141022095286
iteration: 2 HingeLoss: 2.7492028577398444
iteration: 3 HingeLoss: 2.6915275084648145
iteration: 4 HingeLoss: 2.635062126618937
iteration: 5 HingeLoss: 2.579781328373627
iteration: 6 HingeLoss: 2.5256602624259976
iteration: 7 HingeLoss: 2.472674598827047
iteration: 8 HingeLoss: 2.420800518044195
iteration: 9 HingeLoss: 2.370014700253305
iteration: 10 HingeLoss: 2.320294314855323
iteration: 11 HingeLoss: 2.271617010212854
iteration: 12 HingeLoss: 2.223960903602069
iteration: 13 HingeLoss: 2.1773045713753847

```

Output\_hinge\_train.txt

iteration: 14 HingeLoss: 2.1316270393305397  
iteration: 15 HingeLoss: 2.086907773281705  
iteration: 16 HingeLoss: 2.0431266698284127  
iteration: 17 HingeLoss: 2.000264047318134  
iteration: 18 HingeLoss: 1.9583006369984604  
iteration: 19 HingeLoss: 1.9172175743548938  
iteration: 20 HingeLoss: 1.8769963906303695  
iteration: 21 HingeLoss: 1.8376190045226828  
iteration: 22 HingeLoss: 1.7990677140561049  
iteration: 23 HingeLoss: 1.761325188623507  
iteration: 24 HingeLoss: 1.7243744611954552  
iteration: 25 HingeLoss: 1.6881989206927255  
iteration: 26 HingeLoss: 1.6527823045188557  
iteration: 27 HingeLoss: 1.618108691249342  
iteration: 28 HingeLoss: 1.5841624934742207  
iteration: 29 HingeLoss: 1.550928450790793  
iteration: 30 HingeLoss: 1.518391622943365  
iteration: 31 HingeLoss: 1.4865373831069015  
iteration: 32 HingeLoss: 1.455351411311585  
iteration: 33 HingeLoss: 1.424819688005321  
iteration: 34 HingeLoss: 1.394928487751294  
iteration: 35 HingeLoss: 1.3656643730577402  
iteration: 36 HingeLoss: 1.3370141883371696  
iteration: 37 HingeLoss: 1.3089650539923106  
iteration: 38 HingeLoss: 1.281504360626132  
iteration: 39 HingeLoss: 1.2546197633733316  
iteration: 40 HingeLoss: 1.228299176350735  
iteration: 41 HingeLoss: 1.202530767224135  
iteration: 42 HingeLoss: 1.1773029518890963  
iteration: 43 HingeLoss: 1.1526043892633653  
iteration: 44 HingeLoss: 1.1284239761885198  
iteration: 45 HingeLoss: 1.1047508424385801  
iteration: 46 HingeLoss: 1.0815743458333384  
iteration: 47 HingeLoss: 1.0588840674541977  
iteration: 48 HingeLoss: 1.0366698069603781  
iteration: 49 HingeLoss: 1.014921578003396  
iteration: 50 HingeLoss: 0.9936296037377235  
iteration: 51 HingeLoss: 0.972784312425646  
iteration: 52 HingeLoss: 0.9523763331343171  
iteration: 53 HingeLoss: 0.9323964915230833  
iteration: 54 HingeLoss: 0.9128358057191932  
iteration: 55 HingeLoss: 0.8936854822800238  
iteration: 56 HingeLoss: 0.874936912240017  
iteration: 57 HingeLoss: 0.8565816672405466  
iteration: 58 HingeLoss: 0.8386114957409796  
iteration: 59 HingeLoss: 0.8210183193092194  
iteration: 60 HingeLoss: 0.8037942289900765  
iteration: 61 HingeLoss: 0.786931481749821  
iteration: 62 HingeLoss: 0.7704224969953273  
iteration: 63 HingeLoss: 0.7542598531662448  
iteration: 64 HingeLoss: 0.738436284398657  
iteration: 65 HingeLoss: 0.722944677258738

# Output\_hinge\_train.txt

```

iteration: 66 HingeLoss: 0.7077780675449324
iteration: 67 HingeLoss: 0.6929296371572164
iteration: 68 HingeLoss: 0.6783927110320497
iteration: 69 HingeLoss: 0.664160754141617
iteration: 70 HingeLoss: 0.6502273685560308
iteration: 71 HingeLoss: 0.6365862905671615
iteration: 72 HingeLoss: 0.623231387872807
iteration: 73 HingeLoss: 0.610156656819939
iteration: 74 HingeLoss: 0.5973562197057767
iteration: 75 HingeLoss: 0.5848243221354877
iteration: 76 HingeLoss: 0.5725553304353167
iteration: 77 HingeLoss: 0.5605437291199872
iteration: 78 HingeLoss: 0.5487841184132306
iteration: 79 HingeLoss: 0.5372712118203381
iteration: 80 HingeLoss: 0.5259998337516308
iteration: 81 HingeLoss: 0.5149649171957921
iteration: 82 HingeLoss: 0.5041615014420086
iteration: 83 HingeLoss: 0.4935847298498984
iteration: 84 HingeLoss: 0.4832298476662249
iteration: 85 HingeLoss: 0.4730921998874134
iteration: 86 HingeLoss: 0.46316722916690783
iteration: 87 HingeLoss: 0.45345047376643155
iteration: 88 HingeLoss: 0.4439375655502268
iteration: 89 HingeLoss: 0.43462422802137496
iteration: 90 HingeLoss: 0.4255062743993092
iteration: 91 HingeLoss: 0.4165796057376623
iteration: 92 HingeLoss: 0.407840209081598
iteration: 93 HingeLoss: 0.3992841556638011
iteration: 94 HingeLoss: 0.39090759913831186
iteration: 95 HingeLoss: 0.3827067738514136
iteration: 96 HingeLoss: 0.37467799314879713
iteration: 97 HingeLoss: 0.36681764771823494
iteration: 98 HingeLoss: 0.3591222039670283
iteration: 99 HingeLoss: 0.35158820243349115
[-9.19030283e-03 -3.05339261e-04 -7.85578641e-04 ... 5.77877421e-03
 2.72688607e-03 -5.87018398e-06]

```

## CROSS VALIDATION 18

```

iteration: 0 HingeLoss: 13.80828386230579
iteration: 1 HingeLoss: 7.14947466082168
iteration: 2 HingeLoss: 2.7824331080294766
iteration: 3 HingeLoss: 2.724060623478832
iteration: 4 HingeLoss: 2.6669127315132837
iteration: 5 HingeLoss: 2.6109637414840416
iteration: 6 HingeLoss: 2.5561885017047805
iteration: 7 HingeLoss: 2.502562388144779
iteration: 8 HingeLoss: 2.4500612933592665
iteration: 9 HingeLoss: 2.3986616156519993
iteration: 10 HingeLoss: 2.3483402484651976
iteration: 11 HingeLoss: 2.299074569992061
iteration: 12 HingeLoss: 2.2508424330072185
iteration: 13 HingeLoss: 2.203622154910508
iteration: 14 HingeLoss: 2.1573925079796368

```

# Output\_hinge\_train.txt

```

iteration: 15 HingeLoss: 2.112132709827328
iteration: 16 HingeLoss: 2.0678224140586643
iteration: 17 HingeLoss: 2.0244417011244384
iteration: 18 HingeLoss: 1.9819710693663737
iteration: 19 HingeLoss: 1.9403914262502298
iteration: 20 HingeLoss: 1.899684079782803
iteration: 21 HingeLoss: 1.859830730109015
iteration: 22 HingeLoss: 1.8208134612852593
iteration: 23 HingeLoss: 1.7826147332253601
iteration: 24 HingeLoss: 1.745217373815473
iteration: 25 HingeLoss: 1.7086045711944224
iteration: 26 HingeLoss: 1.6727598661959844
iteration: 27 HingeLoss: 1.6376671449497175
iteration: 28 HingeLoss: 1.603310631637031
iteration: 29 HingeLoss: 1.569674881399213
iteration: 30 HingeLoss: 1.5367447733942448
iteration: 31 HingeLoss: 1.5045055039992778
iteration: 32 HingeLoss: 1.4729425801557101
iteration: 33 HingeLoss: 1.4420418128538808
iteration: 34 HingeLoss: 1.4117893107544466
iteration: 35 HingeLoss: 1.3821714739435769
iteration: 36 HingeLoss: 1.3531749878191541
iteration: 37 HingeLoss: 1.324786817105239
iteration: 38 HingeLoss: 1.2969941999921044
iteration: 39 HingeLoss: 1.2697846423992065
iteration: 40 HingeLoss: 1.2431459123585105
iteration: 41 HingeLoss: 1.2170660345156477
iteration: 42 HingeLoss: 1.1915332847464402
iteration: 43 HingeLoss: 1.1665361848863476
iteration: 44 HingeLoss: 1.1420634975705084
iteration: 45 HingeLoss: 1.1181042211820085
iteration: 46 HingeLoss: 1.0946475849061494
iteration: 47 HingeLoss: 1.0716830438884555
iteration: 48 HingeLoss: 1.0492002744942728
iteration: 49 HingeLoss: 1.027189169667813
iteration: 50 HingeLoss: 1.0056398343885593
iteration: 51 HingeLoss: 0.9845425812229905
iteration: 52 HingeLoss: 0.9638879259696282
iteration: 53 HingeLoss: 0.9436665833954452
iteration: 54 HingeLoss: 0.9238694630617165
iteration: 55 HingeLoss: 0.9044876652374466
iteration: 56 HingeLoss: 0.8855124768985214
iteration: 57 HingeLoss: 0.8669353678107964
iteration: 58 HingeLoss: 0.8487479866953594
iteration: 59 HingeLoss: 0.8309421574742388
iteration: 60 HingeLoss: 0.8135098755948749
iteration: 61 HingeLoss: 0.7964433044317005
iteration: 62 HingeLoss: 0.779734771763209
iteration: 63 HingeLoss: 0.7633767663229338
iteration: 64 HingeLoss: 0.7473619344227832
iteration: 65 HingeLoss: 0.7316830766472127
iteration: 66 HingeLoss: 0.7163331446167515

```

# Output\_hinge\_train.txt

```

iteration: 67 HingeLoss: 0.7013052378194277
iteration: 68 HingeLoss: 0.6865926005086633
iteration: 69 HingeLoss: 0.6721886186662528
iteration: 70 HingeLoss: 0.6580868170290511
iteration: 71 HingeLoss: 0.6442808561780403
iteration: 72 HingeLoss: 0.6307645296884659
iteration: 73 HingeLoss: 0.6175317613397564
iteration: 74 HingeLoss: 0.6045766023839799
iteration: 75 HingeLoss: 0.591893228871604
iteration: 76 HingeLoss: 0.5794759390333558
iteration: 77 HingeLoss: 0.5673191507170149
iteration: 78 HingeLoss: 0.5554173988779681
iteration: 79 HingeLoss: 0.543765333122424
iteration: 80 HingeLoss: 0.5323577153021549
iteration: 81 HingeLoss: 0.5211894171597068
iteration: 82 HingeLoss: 0.5102554180230089
iteration: 83 HingeLoss: 0.4995508025483448
iteration: 84 HingeLoss: 0.4890707585106764
iteration: 85 HingeLoss: 0.47881057464032495
iteration: 86 HingeLoss: 0.46876563850503344
iteration: 87 HingeLoss: 0.4589314344364631
iteration: 88 HingeLoss: 0.44930354150019086
iteration: 89 HingeLoss: 0.4398776315082902
iteration: 90 HingeLoss: 0.4306494670736112
iteration: 91 HingeLoss: 0.42161489970487404
iteration: 92 HingeLoss: 0.4127698679417301
iteration: 93 HingeLoss: 0.40411039552894545
iteration: 94 HingeLoss: 0.3956325896288879
iteration: 95 HingeLoss: 0.3873326390715145
iteration: 96 HingeLoss: 0.3792068126410727
iteration: 97 HingeLoss: 0.3712514573987445
iteration: 98 HingeLoss: 0.36346299704047935
iteration: 99 HingeLoss: 0.35583793028927846
[-9.63024748e-03 -1.33339689e-03 -2.32680093e-03 ... 8.58946216e-03
 4.84141400e-03 -1.21625412e-05]

```

## CROSS VALIDATION 19

```

iteration: 0 HingeLoss: 200.12215794462864
iteration: 1 HingeLoss: 54.756004359507244
iteration: 2 HingeLoss: 2.6757969773189494
iteration: 3 HingeLoss: 2.6196616052704815
iteration: 4 HingeLoss: 2.564703893568344
iteration: 5 HingeLoss: 2.5108991361521564
iteration: 6 HingeLoss: 2.458223145268385
iteration: 7 HingeLoss: 2.406652240596813
iteration: 8 HingeLoss: 2.356163238605135
iteration: 9 HingeLoss: 2.3067334421268746
iteration: 10 HingeLoss: 2.258340630157941
iteration: 11 HingeLoss: 2.2109630478672577
iteration: 12 HingeLoss: 2.1645793968169458
iteration: 13 HingeLoss: 2.119168825387676
iteration: 14 HingeLoss: 2.0747109194048954
iteration: 15 HingeLoss: 2.031185692961705

```

# Output\_hinge\_train.txt

```

iteration: 16 HingeLoss: 1.9885735794342516
iteration: 17 HingeLoss: 1.9468554226856256
iteration: 18 HingeLoss: 1.9060124684542696
iteration: 19 HingeLoss: 1.8660263559230785
iteration: 20 HingeLoss: 1.8268791094653345
iteration: 21 HingeLoss: 1.78855313056384
iteration: 22 HingeLoss: 1.7510311898995483
iteration: 23 HingeLoss: 1.7142964196061863
iteration: 24 HingeLoss: 1.67833230568736
iteration: 25 HingeLoss: 1.643122680592737
iteration: 26 HingeLoss: 1.6086517159499842
iteration: 27 HingeLoss: 1.5749039154491642
iteration: 28 HingeLoss: 1.541864107876427
iteration: 29 HingeLoss: 1.5095174402938423
iteration: 30 HingeLoss: 1.4778493713623009
iteration: 31 HingeLoss: 1.4468456648045114
iteration: 32 HingeLoss: 1.4164923830051226
iteration: 33 HingeLoss: 1.3867758807451172
iteration: 34 HingeLoss: 1.3576827990676472
iteration: 35 HingeLoss: 1.3292000592725552
iteration: 36 HingeLoss: 1.3013148570368946
iteration: 37 HingeLoss: 1.2740146566587778
iteration: 38 HingeLoss: 1.2472871854220031
iteration: 39 HingeLoss: 1.2211204280788859
iteration: 40 HingeLoss: 1.19550262144885
iteration: 41 HingeLoss: 1.1704222491303224
iteration: 42 HingeLoss: 1.1458680363235765
iteration: 43 HingeLoss: 1.1218289447621825
iteration: 44 HingeLoss: 1.0982941677507885
iteration: 45 HingeLoss: 1.0752531253070052
iteration: 46 HingeLoss: 1.0526954594052125
iteration: 47 HingeLoss: 1.0306110293201411
iteration: 48 HingeLoss: 1.0089899070681427
iteration: 49 HingeLoss: 0.9878223729440969
iteration: 50 HingeLoss: 0.967098911151947
iteration: 51 HingeLoss: 0.9468102055269126
iteration: 52 HingeLoss: 0.9269471353474273
iteration: 53 HingeLoss: 0.9075007712349582
iteration: 54 HingeLoss: 0.8884623711398252
iteration: 55 HingeLoss: 0.8698233764112452
iteration: 56 HingeLoss: 0.8515754079498175
iteration: 57 HingeLoss: 0.8337102624407264
iteration: 58 HingeLoss: 0.8162199086659689
iteration: 59 HingeLoss: 0.799096483893944
iteration: 60 HingeLoss: 0.7823322903447932
iteration: 61 HingeLoss: 0.7659197917298803
iteration: 62 HingeLoss: 0.7498516098638851
iteration: 63 HingeLoss: 0.7341205213479589
iteration: 64 HingeLoss: 0.7187194543224726
iteration: 65 HingeLoss: 0.7036414852878828
iteration: 66 HingeLoss: 0.6888798359922969
iteration: 67 HingeLoss: 0.6744278703843296

```

# Output\_hinge\_train.txt

```

iteration: 68 HingeLoss: 0.6602790916298914
iteration: 69 HingeLoss: 0.6464271391915544
iteration: 70 HingeLoss: 0.6328657859691946
iteration: 71 HingeLoss: 0.61958893550062
iteration: 72 HingeLoss: 0.6065906192209263
iteration: 73 HingeLoss: 0.5938649937793444
iteration: 74 HingeLoss: 0.5814063384123865
iteration: 75 HingeLoss: 0.5692090523720914
iteration: 76 HingeLoss: 0.5572676524082273
iteration: 77 HingeLoss: 0.5455767703033167
iteration: 78 HingeLoss: 0.5341311504593685
iteration: 79 HingeLoss: 0.5229256475352436
iteration: 80 HingeLoss: 0.5119552241335813
iteration: 81 HingeLoss: 0.501214948536256
iteration: 82 HingeLoss: 0.4906999924873377
iteration: 83 HingeLoss: 0.48040562902256667
iteration: 84 HingeLoss: 0.4703272303443604
iteration: 85 HingeLoss: 0.460460265741403
iteration: 86 HingeLoss: 0.45080029955187984
iteration: 87 HingeLoss: 0.4413429891694376
iteration: 88 HingeLoss: 0.4320840830909827
iteration: 89 HingeLoss: 0.42301941900543005
iteration: 90 HingeLoss: 0.4141449219225499
iteration: 91 HingeLoss: 0.4054566023410697
iteration: 92 HingeLoss: 0.3969505544552061
iteration: 93 HingeLoss: 0.38862295439882394
iteration: 94 HingeLoss: 0.3804700585264281
iteration: 95 HingeLoss: 0.37248820173022135
iteration: 96 HingeLoss: 0.36467379579246517
iteration: 97 HingeLoss: 0.35702332777241086
iteration: 98 HingeLoss: 0.34953335842706534
iteration: 99 HingeLoss: 0.3422005206650939
[-0.00732032 -0.00215004 -0.00557102 ... 0.00383517 0.00130619
 0.000697 ]

```

Accuracy (Hinge Loss): 0.8

eta = 0.0001 lambda = 1

CROSS VALIDATION 0

```

iteration: 0 HingeLoss: 24.987343667345478
iteration: 1 HingeLoss: 0.28262184096061554
iteration: 2 HingeLoss: 0.2766927356040336
iteration: 3 HingeLoss: 0.2708880165659684
iteration: 4 HingeLoss: 0.2652050743538734
iteration: 5 HingeLoss: 0.2596413542195779
iteration: 6 HingeLoss: 0.25419435501080856
iteration: 7 HingeLoss: 0.24886162804680337
iteration: 8 HingeLoss: 0.24364077601751674
iteration: 9 HingeLoss: 0.23852945190591524
iteration: 10 HingeLoss: 0.23352535793288445
iteration: 11 HingeLoss: 0.2286262445242697
iteration: 12 HingeLoss: 0.22382990929958713
iteration: 13 HingeLoss: 0.21913419608195112
iteration: 14 HingeLoss: 0.21453699392877149

```



# Output\_hinge\_train.txt

```

iteration: 15 HingeLoss: 0.21003623618278647
iteration: 16 HingeLoss: 0.2056298995430036
iteration: 17 HingeLoss: 0.2013160031551314
iteration: 18 HingeLoss: 0.19709260772109255
iteration: 19 HingeLoss: 0.19295781462721895
iteration: 20 HingeLoss: 0.1889097650907361
iteration: 21 HingeLoss: 0.18494663932415326
iteration: 22 HingeLoss: 0.18106665571718406
iteration: 23 HingeLoss: 0.17726807003582937
iteration: 24 HingeLoss: 0.1735491746382624
iteration: 25 HingeLoss: 0.16990829770716395
iteration: 26 HingeLoss: 0.16634380249816272
iteration: 27 HingeLoss: 0.16285408660404158
iteration: 28 HingeLoss: 0.15943758123438118
iteration: 29 HingeLoss: 0.15609275051031507
iteration: 30 HingeLoss: 0.1528180907740801
iteration: 31 HingeLoss: 0.14961212991305295
iteration: 32 HingeLoss: 0.1464734266979652
iteration: 33 HingeLoss: 0.14340057013500473
iteration: 34 HingeLoss: 0.1403921788315074
iteration: 35 HingeLoss: 0.13744690037495644
iteration: 36 HingeLoss: 0.13456341072501005
iteration: 37 HingeLoss: 0.13174041361828343
iteration: 38 HingeLoss: 0.12897663998561745
iteration: 39 HingeLoss: 0.12627084738157307
iteration: 40 HingeLoss: 0.12362181942589384
iteration: 41 HingeLoss: 0.1210283652566862
iteration: 42 HingeLoss: 0.11848931899507137
iteration: 43 HingeLoss: 0.1160035392210683
iteration: 44 HingeLoss: 0.11356990846047212
iteration: 45 HingeLoss: 0.11118733268249702
iteration: 46 HingeLoss: 0.10885474080795861
iteration: 47 HingeLoss: 0.10657108422777331
iteration: 48 HingeLoss: 0.10433533633156002
iteration: 49 HingeLoss: 0.10214649204613048
iteration: 50 HingeLoss: 0.10000356738366205
iteration: 51 HingeLoss: 0.09790559899934881
iteration: 52 HingeLoss: 0.0958516437583338
iteration: 53 HingeLoss: 0.09384077831172483
iteration: 54 HingeLoss: 0.09187209868150695
iteration: 55 HingeLoss: 0.08994471985416129
iteration: 56 HingeLoss: 0.08805777538281076
iteration: 57 HingeLoss: 0.08621041699771108
iteration: 58 HingeLoss: 0.08440181422491436
iteration: 59 HingeLoss: 0.08263115401293206
iteration: 60 HingeLoss: 0.08089764036723021
iteration: 61 HingeLoss: 0.07920049399239282
iteration: 62 HingeLoss: 0.07753895194179222
iteration: 63 HingeLoss: 0.07591226727460869
iteration: 64 HingeLoss: 0.07431970872004576
iteration: 65 HingeLoss: 0.07276056034858984
iteration: 66 HingeLoss: 0.07123412125016632

```

# Output\_hinge\_train.txt

```

iteration: 67 HingeLoss: 0.06973970521904782
iteration: 68 HingeLoss: 0.06827664044537274
iteration: 69 HingeLoss: 0.06684426921313494
iteration: 70 HingeLoss: 0.06544194760451015
iteration: 71 HingeLoss: 0.06406904521038444
iteration: 72 HingeLoss: 0.06272494484695601
iteration: 73 HingeLoss: 0.06140904227828227
iteration: 74 HingeLoss: 0.06012074594464733
iteration: 75 HingeLoss: 0.058859476696628485
iteration: 76 HingeLoss: 0.05762466753474131
iteration: 77 HingeLoss: 0.056415763354547094
iteration: 78 HingeLoss: 0.05523222069710714
iteration: 79 HingeLoss: 0.05407350750467285
iteration: 80 HingeLoss: 0.05293910288150082
iteration: 81 HingeLoss: 0.0518284968596857
iteration: 82 HingeLoss: 0.05074119016990595
iteration: 83 HingeLoss: 0.04967669401697894
iteration: 84 HingeLoss: 0.0486345298601246
iteration: 85 HingeLoss: 0.04761422919783894
iteration: 86 HingeLoss: 0.046615333357280894
iteration: 87 HingeLoss: 0.0456373932880772
iteration: 88 HingeLoss: 0.04467996936045347
iteration: 89 HingeLoss: 0.043742631167599876
iteration: 90 HingeLoss: 0.04282495733218339
iteration: 91 HingeLoss: 0.04192653531691877
iteration: 92 HingeLoss: 0.04104696123911386
iteration: 93 HingeLoss: 0.040185839689105454
iteration: 94 HingeLoss: 0.03934278355250412
iteration: 95 HingeLoss: 0.038517413836168246
iteration: 96 HingeLoss: 0.03770935949782882
iteration: 97 HingeLoss: 0.03691825727928867
iteration: 98 HingeLoss: 0.03614375154312087
iteration: 99 HingeLoss: 0.035385494112793195
[-7.19350667e-04 5.28731121e-05 8.03733400e-05 ... 2.21954817e-04
 2.93276678e-04 -3.52224393e-05]

```

## CROSS VALIDATION 1

```

iteration: 0 HingeLoss: 14.94805970879204
iteration: 1 HingeLoss: 0.5847704053946585
iteration: 2 HingeLoss: 0.2982052830445423
iteration: 3 HingeLoss: 0.29194925366248614
iteration: 4 HingeLoss: 0.2858244691169722
iteration: 5 HingeLoss: 0.2798281760310469
iteration: 6 HingeLoss: 0.27395767879067484
iteration: 7 HingeLoss: 0.26821033833293273
iteration: 8 HingeLoss: 0.2625835709596286
iteration: 9 HingeLoss: 0.25707484717580714
iteration: 10 HingeLoss: 0.2516816905526255
iteration: 11 HingeLoss: 0.24640167661408113
iteration: 12 HingeLoss: 0.24123243174709688
iteration: 13 HingeLoss: 0.23617163213447143
iteration: 14 HingeLoss: 0.23121700271021456
iteration: 15 HingeLoss: 0.22636631613679806

```

Output\_hinge\_train.txt

iteration: 16 HingeLoss: 0.22161739180386442  
iteration: 17 HingeLoss: 0.21696809484793986  
iteration: 18 HingeLoss: 0.21241633519271375  
iteration: 19 HingeLoss: 0.20796006660945127  
iteration: 20 HingeLoss: 0.2035972857971183  
iteration: 21 HingeLoss: 0.1993260314818037  
iteration: 22 HingeLoss: 0.1951443835350349  
iteration: 23 HingeLoss: 0.1910504621105911  
iteration: 24 HingeLoss: 0.1870424267994235  
iteration: 25 HingeLoss: 0.18311847580230628  
iteration: 26 HingeLoss: 0.17927684511984307  
iteration: 27 HingeLoss: 0.17551580775946693  
iteration: 28 HingeLoss: 0.17183367295907678  
iteration: 29 HingeLoss: 0.16822878542696013  
iteration: 30 HingeLoss: 0.16469952459766268  
iteration: 31 HingeLoss: 0.16124430390346814  
iteration: 32 HingeLoss: 0.15786157006116197  
iteration: 33 HingeLoss: 0.15454980237375782  
iteration: 34 HingeLoss: 0.1513075120468732  
iteration: 35 HingeLoss: 0.14813324151944718  
iteration: 36 HingeLoss: 0.14502556380849788  
iteration: 37 HingeLoss: 0.14198308186762737  
iteration: 38 HingeLoss: 0.13900442795898388  
iteration: 39 HingeLoss: 0.1360882630384  
iteration: 40 HingeLoss: 0.13323327615342911  
iteration: 41 HingeLoss: 0.1304381838540115  
iteration: 42 HingeLoss: 0.12770172961550347  
iteration: 43 HingeLoss: 0.12502268327381066  
iteration: 44 HingeLoss: 0.12239984047237167  
iteration: 45 HingeLoss: 0.1198320221207439  
iteration: 46 HingeLoss: 0.11731807386454687  
iteration: 47 HingeLoss: 0.11485686556652627  
iteration: 48 HingeLoss: 0.11244729079850399  
iteration: 49 HingeLoss: 0.11008826634398768  
iteration: 50 HingeLoss: 0.10777873171121347  
iteration: 51 HingeLoss: 0.10551764865640606  
iteration: 52 HingeLoss: 0.10330400071703891  
iteration: 53 HingeLoss: 0.10113679275488753  
iteration: 54 HingeLoss: 0.0990150505086679  
iteration: 55 HingeLoss: 0.09693782015606053  
iteration: 56 HingeLoss: 0.0949041678849229  
iteration: 57 HingeLoss: 0.09291317947349703  
iteration: 58 HingeLoss: 0.09096395987942425  
iteration: 59 HingeLoss: 0.08905563283738173  
iteration: 60 HingeLoss: 0.08718734046516029  
iteration: 61 HingeLoss: 0.08535824287800622  
iteration: 62 HingeLoss: 0.0887266079925547  
iteration: 63 HingeLoss: 2.0872524236846886  
iteration: 64 HingeLoss: 0.1311999075841407  
iteration: 65 HingeLoss: 0.12844747319267213  
iteration: 66 HingeLoss: 0.1257527819446161  
iteration: 67 HingeLoss: 0.12311462245029452

# Output\_hinge\_train.txt

```

iteration: 68 HingeLoss: 0.12053180873369532
iteration: 69 HingeLoss: 0.11800317969932067
iteration: 70 HingeLoss: 0.11552759861021997
iteration: 71 HingeLoss: 0.11310395257697396
iteration: 72 HingeLoss: 0.11073115205739853
iteration: 73 HingeLoss: 0.10840813036674485
iteration: 74 HingeLoss: 0.10613384319817441
iteration: 75 HingeLoss: 0.10390726815329454
iteration: 76 HingeLoss: 0.10172740428254248
iteration: 77 HingeLoss: 0.09959327163521171
iteration: 78 HingeLoss: 0.09750391081891821
iteration: 79 HingeLoss: 0.09545838256830903
iteration: 80 HingeLoss: 0.09345576732281828
iteration: 81 HingeLoss: 0.09149516481328189
iteration: 82 HingeLoss: 0.08957569365722447
iteration: 83 HingeLoss: 0.08769649096263649
iteration: 84 HingeLoss: 0.08585671194006463
iteration: 85 HingeLoss: 0.08405552952283854
iteration: 86 HingeLoss: 0.08229213399526632
iteration: 87 HingeLoss: 0.08056573262862926
iteration: 88 HingeLoss: 0.07887554932481337
iteration: 89 HingeLoss: 0.07811646044145443
iteration: 90 HingeLoss: 0.1078170872214906
iteration: 91 HingeLoss: 0.10555519950890904
iteration: 92 HingeLoss: 0.10334076379263138
iteration: 93 HingeLoss: 0.10117278458029039
iteration: 94 HingeLoss: 0.09905028726388916
iteration: 95 HingeLoss: 0.09697231768166881
iteration: 96 HingeLoss: 0.09493794168916841
iteration: 97 HingeLoss: 0.09294624473928356
iteration: 98 HingeLoss: 0.09099633147113442
iteration: 99 HingeLoss: 0.08908732530755918
[-9.39498318e-04  7.45379140e-05 -3.62801387e-04 ...  1.06801468e-03
 4.06331795e-04  1.73370619e-04]

```

## CROSS VALIDATION 2

```

iteration: 0 HingeLoss: 10.707161434291859
iteration: 1 HingeLoss: 2.9476140959424826
iteration: 2 HingeLoss: 0.29868010924692207
iteration: 3 HingeLoss: 0.2924141185166193
iteration: 4 HingeLoss: 0.28627958160134
iteration: 5 HingeLoss: 0.28027374073998557
iteration: 6 HingeLoss: 0.2743938960263486
iteration: 7 HingeLoss: 0.2686374041953797
iteration: 8 HingeLoss: 0.26300167743491665
iteration: 9 HingeLoss: 0.2574841822223416
iteration: 10 HingeLoss: 0.2520824381856439
iteration: 11 HingeLoss: 0.24679401698837694
iteration: 12 HingeLoss: 0.24161654123800844
iteration: 13 HingeLoss: 0.2365476834171698
iteration: 14 HingeLoss: 0.2315851648373294
iteration: 15 HingeLoss: 0.22672675461441522
iteration: 16 HingeLoss: 0.2219702686659281

```

Output\_hinge\_train.txt

iteration: 17 HingeLoss: 0.21731356872909466  
iteration: 18 HingeLoss: 0.21275456139961813  
iteration: 19 HingeLoss: 0.20829119719059563  
iteration: 20 HingeLoss: 0.20392146961117721  
iteration: 21 HingeLoss: 0.19964341426455545  
iteration: 22 HingeLoss: 0.19545510796487628  
iteration: 23 HingeLoss: 0.191354667872678  
iteration: 24 HingeLoss: 0.18734025064846593  
iteration: 25 HingeLoss: 0.18341005162404583  
iteration: 26 HingeLoss: 0.17956230399124146  
iteration: 27 HingeLoss: 0.1757952780076303  
iteration: 28 HingeLoss: 0.17210728021894534  
iteration: 29 HingeLoss: 0.16849665269778688  
iteration: 30 HingeLoss: 0.16496177229830714  
iteration: 31 HingeLoss: 0.16150104992653047  
iteration: 32 HingeLoss: 0.15811292982598102  
iteration: 33 HingeLoss: 0.15479588887829743  
iteration: 34 HingeLoss: 0.15154843591852057  
iteration: 35 HingeLoss: 0.14836911106474424  
iteration: 36 HingeLoss: 0.14525648506183092  
iteration: 37 HingeLoss: 0.142209158638894  
iteration: 38 HingeLoss: 0.13922576188026087  
iteration: 39 HingeLoss: 0.13630495360963085  
iteration: 40 HingeLoss: 0.13344542078715482  
iteration: 41 HingeLoss: 0.13064587791916146  
iteration: 42 HingeLoss: 0.12790506648026861  
iteration: 43 HingeLoss: 0.12522175434761645  
iteration: 44 HingeLoss: 0.12259473524697134  
iteration: 45 HingeLoss: 0.12002282821044892  
iteration: 46 HingeLoss: 0.11750487704561362  
iteration: 47 HingeLoss: 0.11503974981571666  
iteration: 48 HingeLoss: 0.11262633833083693  
iteration: 49 HingeLoss: 0.11026355764969839  
iteration: 50 HingeLoss: 0.10795034559193781  
iteration: 51 HingeLoss: 0.1056856622606053  
iteration: 52 HingeLoss: 0.10346848957468197  
iteration: 53 HingeLoss: 0.10129783081140482  
iteration: 54 HingeLoss: 0.09917271015819352  
iteration: 55 HingeLoss: 0.09709217227397658  
iteration: 56 HingeLoss: 0.09505528185972156  
iteration: 57 HingeLoss: 0.10946880041680372  
iteration: 58 HingeLoss: 0.1071722615197257  
iteration: 59 HingeLoss: 0.10492390156391415  
iteration: 60 HingeLoss: 0.10272270980647054  
iteration: 61 HingeLoss: 0.10056769670880614  
iteration: 62 HingeLoss: 0.09845789349179873  
iteration: 63 HingeLoss: 0.0963923517002804  
iteration: 64 HingeLoss: 0.09437014277666335  
iteration: 65 HingeLoss: 0.09239035764350913  
iteration: 66 HingeLoss: 0.0904521062948564  
iteration: 67 HingeLoss: 0.08855451739612127  
iteration: 68 HingeLoss: 0.08669673789239209

# Output\_hinge\_train.txt

```

iteration: 69 HingeLoss: 0.08487793262494074
iteration: 70 HingeLoss: 0.08309728395578057
iteration: 71 HingeLoss: 0.08135399140009913
iteration: 72 HingeLoss: 0.07964727126640345
iteration: 73 HingeLoss: 0.07797635630421351
iteration: 74 HingeLoss: 0.07634049535914783
iteration: 75 HingeLoss: 0.07473895303524403
iteration: 76 HingeLoss: 0.0731710093643643
iteration: 77 HingeLoss: 0.07163595948253576
iteration: 78 HingeLoss: 0.07013311331308149
iteration: 79 HingeLoss: 0.06866179525639851
iteration: 80 HingeLoss: 0.06722134388624425
iteration: 81 HingeLoss: 0.06581111165239474
iteration: 82 HingeLoss: 0.06443046458954017
iteration: 83 HingeLoss: 0.06307878203228824
iteration: 84 HingeLoss: 0.0617554563361457
iteration: 85 HingeLoss: 0.060459892604353936
iteration: 86 HingeLoss: 0.05919150842045506
iteration: 87 HingeLoss: 0.057949733586468384
iteration: 88 HingeLoss: 0.05673400986655994
iteration: 89 HingeLoss: 0.05554379073608917
iteration: 90 HingeLoss: 0.054378541135920826
iteration: 91 HingeLoss: 0.053237737231890556
iteration: 92 HingeLoss: 0.052120866179317236
iteration: 93 HingeLoss: 0.05102742589245511
iteration: 94 HingeLoss: 0.04995692481878301
iteration: 95 HingeLoss: 0.04890888171802817
iteration: 96 HingeLoss: 0.047882825445826616
iteration: 97 HingeLoss: 0.04687829474192155
iteration: 98 HingeLoss: 0.045894838022805196
iteration: 99 HingeLoss: 0.044932013178711185
[-4.48692799e-04 -1.20252892e-05 -2.92905430e-04 ... 7.58254788e-04
 2.90507161e-04 9.86985257e-05]

```

## CROSS VALIDATION 3

```

iteration: 0 HingeLoss: 21.04851122457258
iteration: 1 HingeLoss: 1.638254194373519
iteration: 2 HingeLoss: 1.0982860716436025
iteration: 3 HingeLoss: 0.308545151510652
iteration: 4 HingeLoss: 0.3020722026955457
iteration: 5 HingeLoss: 0.295735049455764
iteration: 6 HingeLoss: 0.28953084294469866
iteration: 7 HingeLoss: 0.28345679408151025
iteration: 8 HingeLoss: 0.27751017229730646
iteration: 9 HingeLoss: 0.27168830430762336
iteration: 10 HingeLoss: 0.26598857291065947
iteration: 11 HingeLoss: 0.2604084158107208
iteration: 12 HingeLoss: 0.2549453244663491
iteration: 13 HingeLoss: 0.2495968429626158
iteration: 14 HingeLoss: 0.24436056690707297
iteration: 15 HingeLoss: 0.23923414234886622
iteration: 16 HingeLoss: 0.23421526472052484
iteration: 17 HingeLoss: 0.2293016778019496

```

# Output\_hinge\_train.txt

```

iteration: 18 HingeLoss: 0.22449117270613794
iteration: 19 HingeLoss: 0.21978158688618432
iteration: 20 HingeLoss: 0.21517080316311574
iteration: 21 HingeLoss: 0.21065674877411966
iteration: 22 HingeLoss: 0.206237394440741
iteration: 23 HingeLoss: 0.20191075345662662
iteration: 24 HingeLoss: 0.19767488079440737
iteration: 25 HingeLoss: 0.19352787223131784
iteration: 26 HingeLoss: 0.18946786349315936
iteration: 27 HingeLoss: 0.18549302941622056
iteration: 28 HingeLoss: 0.18160158312678265
iteration: 29 HingeLoss: 0.17779177523783474
iteration: 30 HingeLoss: 0.17406189306264322
iteration: 31 HingeLoss: 0.1704102598448187
iteration: 32 HingeLoss: 0.1668352340045362
iteration: 33 HingeLoss: 0.16333520840056778
iteration: 34 HingeLoss: 0.1599086096077973
iteration: 35 HingeLoss: 0.15655389720989288
iteration: 36 HingeLoss: 0.15326956310681744
iteration: 37 HingeLoss: 0.15005413083686697
iteration: 38 HingeLoss: 0.14690615491293235
iteration: 39 HingeLoss: 0.1438242201726853
iteration: 40 HingeLoss: 0.14080694114239659
iteration: 41 HingeLoss: 0.13785296141410083
iteration: 42 HingeLoss: 0.13496095303582797
iteration: 43 HingeLoss: 0.1321296159146264
iteration: 44 HingeLoss: 0.12935767723211075
iteration: 45 HingeLoss: 0.12664389087227046
iteration: 46 HingeLoss: 0.12398703686128205
iteration: 47 HingeLoss: 0.12138592081907433
iteration: 48 HingeLoss: 0.11883937342239856
iteration: 49 HingeLoss: 0.11634624987916271
iteration: 50 HingeLoss: 0.11390542941379433
iteration: 51 HingeLoss: 0.11151581476339943
iteration: 52 HingeLoss: 0.10917633168449123
iteration: 53 HingeLoss: 0.10688592847006778
iteration: 54 HingeLoss: 0.10464357547682047
iteration: 55 HingeLoss: 0.1024482646622612
iteration: 56 HingeLoss: 0.10029900913156017
iteration: 57 HingeLoss: 0.09819484269389037
iteration: 58 HingeLoss: 0.09613481942807993
iteration: 59 HingeLoss: 0.09411801325737605
iteration: 60 HingeLoss: 0.09214351753313053
iteration: 61 HingeLoss: 0.09021044462721843
iteration: 62 HingeLoss: 0.08831792553300798
iteration: 63 HingeLoss: 0.08646510947470154
iteration: 64 HingeLoss: 0.08465116352487202
iteration: 65 HingeLoss: 0.08287527223002286
iteration: 66 HingeLoss: 0.08113663724400394
iteration: 67 HingeLoss: 0.07943447696911743
iteration: 68 HingeLoss: 0.07776802620475315
iteration: 69 HingeLoss: 0.07613653580339504

```

# Output\_hinge\_train.txt

```

iteration: 70 HingeLoss: 0.0745392723338446
iteration: 71 HingeLoss: 0.0729755177515089
iteration: 72 HingeLoss: 0.07144456907560637
iteration: 73 HingeLoss: 0.06994573807314367
iteration: 74 HingeLoss: 0.06847835094952312
iteration: 75 HingeLoss: 0.06704174804564036
iteration: 76 HingeLoss: 0.06563528354133688
iteration: 77 HingeLoss: 0.06425832516507349
iteration: 78 HingeLoss: 0.0629102539096948
iteration: 79 HingeLoss: 0.06159046375415664
iteration: 80 HingeLoss: 0.060298361391091196
iteration: 81 HingeLoss: 0.059033365960087514
iteration: 82 HingeLoss: 0.057794908786567845
iteration: 83 HingeLoss: 0.05658243312614164
iteration: 84 HingeLoss: 0.055395393914322945
iteration: 85 HingeLoss: 0.0542332575214985
iteration: 86 HingeLoss: 0.05309550151303628
iteration: 87 HingeLoss: 0.051981614414426634
iteration: 88 HingeLoss: 0.05089109548135062
iteration: 89 HingeLoss: 0.049823454474572114
iteration: 90 HingeLoss: 0.04877821143955218
iteration: 91 HingeLoss: 0.047754896490687246
iteration: 92 HingeLoss: 0.04675304960007344
iteration: 93 HingeLoss: 0.045772220390702625
iteration: 94 HingeLoss: 0.04481196793399679
iteration: 95 HingeLoss: 0.04387186055159015
iteration: 96 HingeLoss: 0.042951475621269435
iteration: 97 HingeLoss: 0.04205039938698561
iteration: 98 HingeLoss: 0.04116822677285094
iteration: 99 HingeLoss: 0.040304561201038674
[-1.02908247e-03 -1.03757346e-04 -1.84246388e-04 ... 7.82692432e-04
 4.72304691e-04 7.07077384e-05]

```

## CROSS VALIDATION 4

```

iteration: 0 HingeLoss: 21.04851122457258
iteration: 1 HingeLoss: 1.638254194373519
iteration: 2 HingeLoss: 1.0982860716436025
iteration: 3 HingeLoss: 0.308545151510652
iteration: 4 HingeLoss: 0.3020722026955457
iteration: 5 HingeLoss: 0.295735049455764
iteration: 6 HingeLoss: 0.28953084294469866
iteration: 7 HingeLoss: 0.28345679408151025
iteration: 8 HingeLoss: 0.27751017229730646
iteration: 9 HingeLoss: 0.27168830430762336
iteration: 10 HingeLoss: 0.26598857291065947
iteration: 11 HingeLoss: 0.2604084158107208
iteration: 12 HingeLoss: 0.2549453244663491
iteration: 13 HingeLoss: 0.2495968429626158
iteration: 14 HingeLoss: 0.24436056690707297
iteration: 15 HingeLoss: 0.23923414234886622
iteration: 16 HingeLoss: 0.23421526472052484
iteration: 17 HingeLoss: 0.2293016778019496
iteration: 18 HingeLoss: 0.22449117270613794

```



# Output\_hinge\_train.txt

```

iteration: 19 HingeLoss: 0.21978158688618432
iteration: 20 HingeLoss: 0.21517080316311574
iteration: 21 HingeLoss: 0.21065674877411966
iteration: 22 HingeLoss: 0.206237394440741
iteration: 23 HingeLoss: 0.20191075345662662
iteration: 24 HingeLoss: 0.19767488079440737
iteration: 25 HingeLoss: 0.19352787223131784
iteration: 26 HingeLoss: 0.18946786349315936
iteration: 27 HingeLoss: 0.18549302941622056
iteration: 28 HingeLoss: 0.18160158312678265
iteration: 29 HingeLoss: 0.17779177523783474
iteration: 30 HingeLoss: 0.17406189306264322
iteration: 31 HingeLoss: 0.1704102598448187
iteration: 32 HingeLoss: 0.1668352340045362
iteration: 33 HingeLoss: 0.16333520840056778
iteration: 34 HingeLoss: 0.1599086096077973
iteration: 35 HingeLoss: 0.15655389720989288
iteration: 36 HingeLoss: 0.15326956310681744
iteration: 37 HingeLoss: 0.15005413083686697
iteration: 38 HingeLoss: 0.14690615491293235
iteration: 39 HingeLoss: 0.1438242201726853
iteration: 40 HingeLoss: 0.14080694114239659
iteration: 41 HingeLoss: 0.13785296141410083
iteration: 42 HingeLoss: 0.13496095303582797
iteration: 43 HingeLoss: 0.1321296159146264
iteration: 44 HingeLoss: 0.12935767723211075
iteration: 45 HingeLoss: 0.12664389087227046
iteration: 46 HingeLoss: 0.12398703686128205
iteration: 47 HingeLoss: 0.12138592081907433
iteration: 48 HingeLoss: 0.11883937342239856
iteration: 49 HingeLoss: 0.11634624987916271
iteration: 50 HingeLoss: 0.11390542941379433
iteration: 51 HingeLoss: 0.11151581476339943
iteration: 52 HingeLoss: 0.10917633168449123
iteration: 53 HingeLoss: 0.10688592847006778
iteration: 54 HingeLoss: 0.10464357547682047
iteration: 55 HingeLoss: 0.1024482646622612
iteration: 56 HingeLoss: 0.10029900913156017
iteration: 57 HingeLoss: 0.09819484269389037
iteration: 58 HingeLoss: 0.09613481942807993
iteration: 59 HingeLoss: 0.09411801325737605
iteration: 60 HingeLoss: 0.09214351753313053
iteration: 61 HingeLoss: 0.09021044462721843
iteration: 62 HingeLoss: 0.08831792553300798
iteration: 63 HingeLoss: 0.08646510947470154
iteration: 64 HingeLoss: 0.08465116352487202
iteration: 65 HingeLoss: 0.08287527223002286
iteration: 66 HingeLoss: 0.08113663724400394
iteration: 67 HingeLoss: 0.07943447696911743
iteration: 68 HingeLoss: 0.07776802620475315
iteration: 69 HingeLoss: 0.07613653580339504
iteration: 70 HingeLoss: 0.0745392723338446

```

# Output\_hinge\_train.txt

```

iteration: 71 HingeLoss: 0.0729755177515089
iteration: 72 HingeLoss: 0.07144456907560637
iteration: 73 HingeLoss: 0.06994573807314367
iteration: 74 HingeLoss: 0.06847835094952312
iteration: 75 HingeLoss: 0.06704174804564036
iteration: 76 HingeLoss: 0.06563528354133688
iteration: 77 HingeLoss: 0.06425832516507349
iteration: 78 HingeLoss: 0.0629102539096948
iteration: 79 HingeLoss: 0.06159046375415664
iteration: 80 HingeLoss: 0.060298361391091196
iteration: 81 HingeLoss: 0.059033365960087514
iteration: 82 HingeLoss: 0.057794908786567845
iteration: 83 HingeLoss: 0.05658243312614164
iteration: 84 HingeLoss: 0.055395393914322945
iteration: 85 HingeLoss: 0.0542332575214985
iteration: 86 HingeLoss: 0.05309550151303628
iteration: 87 HingeLoss: 0.051981614414426634
iteration: 88 HingeLoss: 0.05089109548135062
iteration: 89 HingeLoss: 0.049823454474572114
iteration: 90 HingeLoss: 0.04877821143955218
iteration: 91 HingeLoss: 0.047754896490687246
iteration: 92 HingeLoss: 0.04675304960007344
iteration: 93 HingeLoss: 0.045772220390702625
iteration: 94 HingeLoss: 0.04481196793399679
iteration: 95 HingeLoss: 0.04387186055159015
iteration: 96 HingeLoss: 0.042951475621269435
iteration: 97 HingeLoss: 0.04205039938698561
iteration: 98 HingeLoss: 0.04116822677285094
iteration: 99 HingeLoss: 0.040304561201038674
[-1.02908247e-03 -1.03757346e-04 -1.84246388e-04 ... 7.82692432e-04
 4.72304691e-04 7.07077384e-05]

```

## CROSS VALIDATION 5

```

iteration: 0 HingeLoss: 9.893294234992354
iteration: 1 HingeLoss: 0.2922755073280168
iteration: 2 HingeLoss: 0.28614387832791544
iteration: 3 HingeLoss: 0.28014088437677354
iteration: 4 HingeLoss: 0.27426382684820366
iteration: 5 HingeLoss: 0.26851006373012626
iteration: 6 HingeLoss: 0.2628770084370633
iteration: 7 HingeLoss: 0.2573621286473461
iteration: 8 HingeLoss: 0.25196294516471873
iteration: 9 HingeLoss: 0.24667703080382394
iteration: 10 HingeLoss: 0.241502009299069
iteration: 11 HingeLoss: 0.23643555423638346
iteration: 12 HingeLoss: 0.23147538800738832
iteration: 13 HingeLoss: 0.22661928078550256
iteration: 14 HingeLoss: 0.2218650495235342
iteration: 15 HingeLoss: 0.21721055697229652
iteration: 16 HingeLoss: 0.21265371071981604
iteration: 17 HingeLoss: 0.2081924622506944
iteration: 18 HingeLoss: 0.2038248060252062
iteration: 19 HingeLoss: 0.19954877857771436

```

Output\_hinge\_train.txt

iteration: 20 HingeLoss: 0.19536245763400012  
iteration: 21 HingeLoss: 0.1912639612471121  
iteration: 22 HingeLoss: 0.1872514469513422  
iteration: 23 HingeLoss: 0.18332311093395137  
iteration: 24 HingeLoss: 0.17947718722427175  
iteration: 25 HingeLoss: 0.17571194689982017  
iteration: 26 HingeLoss: 0.1720256973090664  
iteration: 27 HingeLoss: 0.16841678131050764  
iteration: 28 HingeLoss: 0.16488357652770552  
iteration: 29 HingeLoss: 0.1614244946199522  
iteration: 30 HingeLoss: 0.1580379805682373  
iteration: 31 HingeLoss: 0.15472251197619363  
iteration: 32 HingeLoss: 0.15147659838570907  
iteration: 33 HingeLoss: 0.148298780606896  
iteration: 34 HingeLoss: 0.14518763006211766  
iteration: 35 HingeLoss: 0.14214174814377478  
iteration: 36 HingeLoss: 0.13915976558556692  
iteration: 37 HingeLoss: 0.13624034184694284  
iteration: 38 HingeLoss: 0.13338216451046514  
iteration: 39 HingeLoss: 0.13058394869181697  
iteration: 40 HingeLoss: 0.12784443646218663  
iteration: 41 HingeLoss: 0.12516239628276976  
iteration: 42 HingeLoss: 0.12253662245113511  
iteration: 43 HingeLoss: 0.11996593455920503  
iteration: 44 HingeLoss: 0.11744917696260639  
iteration: 45 HingeLoss: 0.114985218261155  
iteration: 46 HingeLoss: 0.11257295079023813  
iteration: 47 HingeLoss: 0.11021129012286732  
iteration: 48 HingeLoss: 0.10789917458217793  
iteration: 49 HingeLoss: 0.10563556476415578  
iteration: 50 HingeLoss: 0.10341944307037637  
iteration: 51 HingeLoss: 0.10124981325054683  
iteration: 52 HingeLoss: 0.09912569995464486  
iteration: 53 HingeLoss: 0.09704614829445352  
iteration: 54 HingeLoss: 0.09501022341429377  
iteration: 55 HingeLoss: 0.09301701007076368  
iteration: 56 HingeLoss: 0.09106561222129375  
iteration: 57 HingeLoss: 0.08915515262133339  
iteration: 58 HingeLoss: 0.08728477242998905  
iteration: 59 HingeLoss: 0.08545363082393465  
iteration: 60 HingeLoss: 0.08366090461942254  
iteration: 61 HingeLoss: 0.08190578790222369  
iteration: 62 HingeLoss: 0.08018749166533162  
iteration: 63 HingeLoss: 0.07850524345426707  
iteration: 64 HingeLoss: 0.07685828701982325  
iteration: 65 HingeLoss: 0.07524588197809669  
iteration: 66 HingeLoss: 0.07366730347765013  
iteration: 67 HingeLoss: 0.07212184187365775  
iteration: 68 HingeLoss: 0.07060880240888673  
iteration: 69 HingeLoss: 0.06912750490137141  
iteration: 70 HingeLoss: 0.06767728343863962  
iteration: 71 HingeLoss: 0.066257486078354

# Output\_hinge\_train.txt

```

iteration: 72 HingeLoss: 0.06486747455523344
iteration: 73 HingeLoss: 0.06350662399412281
iteration: 74 HingeLoss: 0.06217432262908269
iteration: 75 HingeLoss: 0.06086997152837174
iteration: 76 HingeLoss: 0.059592984325198925
iteration: 77 HingeLoss: 0.05834278695412429
iteration: 78 HingeLoss: 0.05711881739298974
iteration: 79 HingeLoss: 0.05592052541026367
iteration: 80 HingeLoss: 0.054747372317686255
iteration: 81 HingeLoss: 0.05359883072810401
iteration: 82 HingeLoss: 0.052474384318384366
iteration: 83 HingeLoss: 0.05137352759730447
iteration: 84 HingeLoss: 0.05029576567830925
iteration: 85 HingeLoss: 0.04924061405703662
iteration: 86 HingeLoss: 0.04820759839351034
iteration: 87 HingeLoss: 0.04719625429890184
iteration: 88 HingeLoss: 0.046206127126765785
iteration: 89 HingeLoss: 0.045236771768655364
iteration: 90 HingeLoss: 0.04428775245402505
iteration: 91 HingeLoss: 0.04335864255433147
iteration: 92 HingeLoss: 0.04244902439124401
iteration: 93 HingeLoss: 0.041558489048878614
iteration: 94 HingeLoss: 0.04068663618997134
iteration: 95 HingeLoss: 0.03983307387590777
iteration: 96 HingeLoss: 0.03899741839052838
iteration: 97 HingeLoss: 0.03817929406763018
iteration: 98 HingeLoss: 0.03737833312208726
iteration: 99 HingeLoss: 0.03659417548451405
[-3.54146849e-04  2.83508198e-04 -3.34655430e-04 ...  7.17442851e-05
 9.37207667e-05  2.08685346e-04]

```

## CROSS VALIDATION 6

```

iteration: 0 HingeLoss: 21.045981778303453
iteration: 1 HingeLoss: 1.6380971446438717
iteration: 2 HingeLoss: 0.2965121690021122
iteration: 3 HingeLoss: 0.2902916593502518
iteration: 4 HingeLoss: 0.28420164936880654
iteration: 5 HingeLoss: 0.27823940131361535
iteration: 6 HingeLoss: 0.2724022348754752
iteration: 7 HingeLoss: 0.266687525975217
iteration: 8 HingeLoss: 0.2610927055840584
iteration: 9 HingeLoss: 0.2556152585687069
iteration: 10 HingeLoss: 0.25025272256068865
iteration: 11 HingeLoss: 0.24500268684939855
iteration: 12 HingeLoss: 0.23986279129837454
iteration: 13 HingeLoss: 0.23483072528430438
iteration: 14 HingeLoss: 0.22990422665829346
iteration: 15 HingeLoss: 0.2250810807289227
iteration: 16 HingeLoss: 0.2203591192666412
iteration: 17 HingeLoss: 0.215736219529046
iteration: 18 HingeLoss: 0.21121030330661011
iteration: 19 HingeLoss: 0.20677933598842974
iteration: 20 HingeLoss: 0.20244132564757183

```

# Output\_hinge\_train.txt

```

iteration: 21 HingeLoss: 0.1981943221456103
iteration: 22 HingeLoss: 0.19403641625594706
iteration: 23 HingeLoss: 0.18996573880552528
iteration: 24 HingeLoss: 0.1859804598345493
iteration: 25 HingeLoss: 0.1820787877738319
iteration: 26 HingeLoss: 0.17825896863939988
iteration: 27 HingeLoss: 0.17451928524399699
iteration: 28 HingeLoss: 0.1708580564251273
iteration: 29 HingeLoss: 0.16727363628929448
iteration: 30 HingeLoss: 0.16376441347209558
iteration: 31 HingeLoss: 0.1603288104138373
iteration: 32 HingeLoss: 0.1569652826503495
iteration: 33 HingeLoss: 0.15367231811867607
iteration: 34 HingeLoss: 0.15044843647733203
iteration: 35 HingeLoss: 0.14729218844082098
iteration: 36 HingeLoss: 0.14420215512811305
iteration: 37 HingeLoss: 0.1411769474247923
iteration: 38 HingeLoss: 0.13821520535858434
iteration: 39 HingeLoss: 0.13531559748798516
iteration: 40 HingeLoss: 0.1324768203037163
iteration: 41 HingeLoss: 0.12969759764273603
iteration: 42 HingeLoss: 0.1269766801145451
iteration: 43 HingeLoss: 0.12431284453952651
iteration: 44 HingeLoss: 0.12170489339906979
iteration: 45 HingeLoss: 0.11915165429722982
iteration: 46 HingeLoss: 0.11665197943368054
iteration: 47 HingeLoss: 0.11420474508772469
iteration: 48 HingeLoss: 0.11180885111312897
iteration: 49 HingeLoss: 0.109463220443557
iteration: 50 HingeLoss: 0.10716679860837747
iteration: 51 HingeLoss: 0.10491855325863048
iteration: 52 HingeLoss: 0.10271747370293804
iteration: 53 HingeLoss: 0.10056257045315167
iteration: 54 HingeLoss: 0.09845287477953073
iteration: 55 HingeLoss: 0.09638743827525313
iteration: 56 HingeLoss: 0.09436533243006251
iteration: 57 HingeLoss: 0.09238564821285906
iteration: 58 HingeLoss: 0.09044749566304791
iteration: 59 HingeLoss: 0.08855000349045991
iteration: 60 HingeLoss: 0.0866923186836661
iteration: 61 HingeLoss: 0.0848736061265094
iteration: 62 HingeLoss: 0.0830930482226805
iteration: 63 HingeLoss: 0.08134984452817037
iteration: 64 HingeLoss: 0.07964321139143313
iteration: 65 HingeLoss: 0.07797238160109812
iteration: 66 HingeLoss: 0.07633660404107247
iteration: 67 HingeLoss: 0.0747351433528794
iteration: 68 HingeLoss: 0.07316727960508007
iteration: 69 HingeLoss: 0.07163230796963077
iteration: 70 HingeLoss: 0.07012953840503
iteration: 71 HingeLoss: 0.06865829534611222
iteration: 72 HingeLoss: 0.06721791740034994

```

# Output\_hinge\_train.txt

```

iteration: 73 HingeLoss: 0.06580775705052679
iteration: 74 HingeLoss: 0.06442718036364828
iteration: 75 HingeLoss: 0.06307556670595933
iteration: 76 HingeLoss: 0.061752308463940246
iteration: 77 HingeLoss: 0.060456810771156284
iteration: 78 HingeLoss: 0.059188491240837075
iteration: 79 HingeLoss: 0.05794677970406683
iteration: 80 HingeLoss: 0.0567311179534666
iteration: 81 HingeLoss: 0.05554095949225393
iteration: 82 HingeLoss: 0.054375769288567244
iteration: 83 HingeLoss: 0.05323502353494369
iteration: 84 HingeLoss: 0.05211820941284339
iteration: 85 HingeLoss: 0.051024824862113655
iteration: 86 HingeLoss: 0.049954378355289104
iteration: 87 HingeLoss: 0.048906388676627555
iteration: 88 HingeLoss: 0.047880384705780626
iteration: 89 HingeLoss: 0.046875905206003356
iteration: 90 HingeLoss: 0.04589249861680683
iteration: 91 HingeLoss: 0.04492972285096021
iteration: 92 HingeLoss: 1.834427989992155
iteration: 93 HingeLoss: 0.11095687606089122
iteration: 94 HingeLoss: 0.10862911892094007
iteration: 95 HingeLoss: 0.10635019564775729
iteration: 96 HingeLoss: 0.10411908175880445
iteration: 97 HingeLoss: 0.10193477426409633
iteration: 98 HingeLoss: 0.09979629121530943
iteration: 99 HingeLoss: 0.09770267126435128
[-0.00063591 0.00037123 -0.00022731 ... 0.00098958 0.00074402
 0.00022141]

```

## CROSS VALIDATION 7

```

iteration: 0 HingeLoss: 21.045981778303453
iteration: 1 HingeLoss: 1.6380971446438717
iteration: 2 HingeLoss: 1.0978003788090223
iteration: 3 HingeLoss: 0.3085575899142467
iteration: 4 HingeLoss: 0.30208438015467465
iteration: 5 HingeLoss: 0.295746971444764
iteration: 6 HingeLoss: 0.28954251482306115
iteration: 7 HingeLoss: 0.28346822109629
iteration: 8 HingeLoss: 0.2775213595854809
iteration: 9 HingeLoss: 0.27169925689840124
iteration: 10 HingeLoss: 0.26599929572774256
iteration: 11 HingeLoss: 0.26041891367451653
iteration: 12 HingeLoss: 0.2549556020961381
iteration: 13 HingeLoss: 0.24960690497867286
iteration: 14 HingeLoss: 0.24437041783274452
iteration: 15 HingeLoss: 0.23924378661260415
iteration: 16 HingeLoss: 0.23422470665787623
iteration: 17 HingeLoss: 0.2293109216575071
iteration: 18 HingeLoss: 0.2245002226354464
iteration: 19 HingeLoss: 0.21979044695761005
iteration: 20 HingeLoss: 0.21517947735967496
iteration: 21 HingeLoss: 0.21066524099526912

```

Output\_hinge\_train.txt

iteration: 22 HingeLoss: 0.20624570850413132  
iteration: 23 HingeLoss: 0.2019188930998178  
iteration: 24 HingeLoss: 0.19768284967654945  
iteration: 25 HingeLoss: 0.19353567393479582  
iteration: 26 HingeLoss: 0.18947550152520362  
iteration: 27 HingeLoss: 0.18550050721048383  
iteration: 28 HingeLoss: 0.1816089040448829  
iteration: 29 HingeLoss: 0.17779894257086667  
iteration: 30 HingeLoss: 0.17406891003265812  
iteration: 31 HingeLoss: 0.17041712960627273  
iteration: 32 HingeLoss: 0.1668419596457082  
iteration: 33 HingeLoss: 0.16334179294494772  
iteration: 34 HingeLoss: 0.1599150560154458  
iteration: 35 HingeLoss: 0.1565602083787715  
iteration: 36 HingeLoss: 0.15327574187409163  
iteration: 37 HingeLoss: 0.15006017998018134  
iteration: 38 HingeLoss: 0.14691207715165963  
iteration: 39 HingeLoss: 0.14383001816914862  
iteration: 40 HingeLoss: 0.14081261750306637  
iteration: 41 HingeLoss: 0.13785851869076665  
iteration: 42 HingeLoss: 0.13496639372674532  
iteration: 43 HingeLoss: 0.13213494246564023  
iteration: 44 HingeLoss: 0.12936289203775475  
iteration: 45 HingeLoss: 0.1266489962768435  
iteration: 46 HingeLoss: 0.12399203515990213  
iteration: 47 HingeLoss: 0.12139081425871036  
iteration: 48 HingeLoss: 0.11884416420288028  
iteration: 49 HingeLoss: 0.11635094015417002  
iteration: 50 HingeLoss: 0.11391002129182509  
iteration: 51 HingeLoss: 0.11152031030871742  
iteration: 52 HingeLoss: 0.10918073291805414  
iteration: 53 HingeLoss: 0.10689023737043593  
iteration: 54 HingeLoss: 0.10464779398104593  
iteration: 55 HingeLoss: 0.10245239466675891  
iteration: 56 HingeLoss: 0.10030305249296012  
iteration: 57 HingeLoss: 0.09819880122987251  
iteration: 58 HingeLoss: 0.09613869491819123  
iteration: 59 HingeLoss: 0.09412180744383053  
iteration: 60 HingeLoss: 0.09214723212159232  
iteration: 61 HingeLoss: 0.09021408128756864  
iteration: 62 HingeLoss: 0.08832148590009548  
iteration: 63 HingeLoss: 0.0864685951490778  
iteration: 64 HingeLoss: 0.0846545760735105  
iteration: 65 HingeLoss: 0.08287861318702378  
iteration: 66 HingeLoss: 0.08113990811128362  
iteration: 67 HingeLoss: 0.0794376792170836  
iteration: 68 HingeLoss: 0.07777116127296595  
iteration: 69 HingeLoss: 0.07613960510121422  
iteration: 70 HingeLoss: 0.07454227724106294  
iteration: 71 HingeLoss: 0.07297845961897273  
iteration: 72 HingeLoss: 0.07144744922582258  
iteration: 73 HingeLoss: 0.06994855780087439

# Output\_hinge\_train.txt

```

iteration: 74 HingeLoss: 0.06848111152236781
iteration: 75 HingeLoss: 0.0670444507046056
iteration: 76 HingeLoss: 0.06563792950139413
iteration: 77 HingeLoss: 0.06426091561570552
iteration: 78 HingeLoss: 0.06291279001543024
iteration: 79 HingeLoss: 0.061592946655093586
iteration: 80 HingeLoss: 0.0603007922034096
iteration: 81 HingeLoss: 0.05903574577655127
iteration: 82 HingeLoss: 0.05779723867701565
iteration: 83 HingeLoss: 0.05658471413796816
iteration: 84 HingeLoss: 0.055397627072949596
iteration: 85 HingeLoss: 0.05423544383083452
iteration: 86 HingeLoss: 0.053097641955929836
iteration: 87 HingeLoss: 0.05198370995310693
iteration: 88 HingeLoss: 0.05089314705786024
iteration: 89 HingeLoss: 0.04982546301119058
iteration: 90 HingeLoss: 0.048780177839210584
iteration: 91 HingeLoss: 0.04775682163737413
iteration: 92 HingeLoss: 0.046754934359232295
iteration: 93 HingeLoss: 0.04577406560962073
iteration: 94 HingeLoss: 0.04481377444218633
iteration: 95 HingeLoss: 0.043873629161161
iteration: 96 HingeLoss: 0.04295320712729429
iteration: 97 HingeLoss: 0.04205209456785733
iteration: 98 HingeLoss: 0.04116988639063259
iteration: 99 HingeLoss: 0.04030618600180603
[-1.02908560e-03 -1.03732389e-04 -1.84231576e-04 ... 7.82732225e-04
 4.72350742e-04 7.07079639e-05]

```

## CROSS VALIDATION 8

```

iteration: 0 HingeLoss: 23.880358264168212
iteration: 1 HingeLoss: 1.0590065478652582
iteration: 2 HingeLoss: 0.4466211901107942
iteration: 3 HingeLoss: 0.3096784967826397
iteration: 4 HingeLoss: 0.3031817715902368
iteration: 5 HingeLoss: 0.2968213407762427
iteration: 6 HingeLoss: 0.29059434502969145
iteration: 7 HingeLoss: 0.28449798502491747
iteration: 8 HingeLoss: 0.278529520163127
iteration: 9 HingeLoss: 0.27268626734037194
iteration: 10 HingeLoss: 0.2669655997413686
iteration: 11 HingeLoss: 0.2613649456586213
iteration: 12 HingeLoss: 0.2558817873363203
iteration: 13 HingeLoss: 0.2505136598384921
iteration: 14 HingeLoss: 0.24525814994089615
iteration: 15 HingeLoss: 0.24011289504616726
iteration: 16 HingeLoss: 0.23507558212171784
iteration: 17 HingeLoss: 0.23014394665992177
iteration: 18 HingeLoss: 0.22531577166011219
iteration: 19 HingeLoss: 0.22058888663193604
iteration: 20 HingeLoss: 0.2159611666196173
iteration: 21 HingeLoss: 0.21143053124668992
iteration: 22 HingeLoss: 0.20699494378077152

```



Output\_hinge\_train.txt

iteration: 23 HingeLoss: 0.20265241021795688  
iteration: 24 HingeLoss: 0.19840097838642012  
iteration: 25 HingeLoss: 0.19423873706882172  
iteration: 26 HingeLoss: 0.19016381514312763  
iteration: 27 HingeLoss: 0.18617438074145215  
iteration: 28 HingeLoss: 0.18226864042654758  
iteration: 29 HingeLoss: 0.17844483838557046  
iteration: 30 HingeLoss: 0.1747012556407616  
iteration: 31 HingeLoss: 0.1710362092766855  
iteration: 32 HingeLoss: 0.16744805168368068  
iteration: 33 HingeLoss: 0.16393516981718248  
iteration: 34 HingeLoss: 0.16049598447258392  
iteration: 35 HingeLoss: 0.15712894957530976  
iteration: 36 HingeLoss: 0.1538325514857833  
iteration: 37 HingeLoss: 0.15060530831897473  
iteration: 38 HingeLoss: 0.14744576927822484  
iteration: 39 HingeLoss: 0.1443525140030436  
iteration: 40 HingeLoss: 0.1413241519305923  
iteration: 41 HingeLoss: 0.1383593216705601  
iteration: 42 HingeLoss: 0.13545669039315553  
iteration: 43 HingeLoss: 0.13261495322993738  
iteration: 44 HingeLoss: 0.12983283268721535  
iteration: 45 HingeLoss: 0.12710907807175648  
iteration: 46 HingeLoss: 0.12444246492854073  
iteration: 47 HingeLoss: 0.12183179449031058  
iteration: 48 HingeLoss: 0.11927589313866971  
iteration: 49 HingeLoss: 0.11677361187648615  
iteration: 50 HingeLoss: 0.11432382581136474  
iteration: 51 HingeLoss: 0.11192543364995518  
iteration: 52 HingeLoss: 0.10957735720286922  
iteration: 53 HingeLoss: 0.10727854089998438  
iteration: 54 HingeLoss: 0.10502795131591533  
iteration: 55 HingeLoss: 0.10282457670544147  
iteration: 56 HingeLoss: 0.10066742654867973  
iteration: 57 HingeLoss: 0.09855553110579973  
iteration: 58 HingeLoss: 0.09648794098108039  
iteration: 59 HingeLoss: 0.0944637266961123  
iteration: 60 HingeLoss: 0.09248197827195333  
iteration: 61 HingeLoss: 0.09054180482005111  
iteration: 62 HingeLoss: 0.08864233414174658  
iteration: 63 HingeLoss: 0.08678271233618  
iteration: 64 HingeLoss: 0.08496210341642262  
iteration: 65 HingeLoss: 0.08317968893366164  
iteration: 66 HingeLoss: 0.08143466760926901  
iteration: 67 HingeLoss: 0.07972625497458921  
iteration: 68 HingeLoss: 0.07805368301828416  
iteration: 69 HingeLoss: 0.07641619984107588  
iteration: 70 HingeLoss: 0.07481306931773288  
iteration: 71 HingeLoss: 0.07324357076614749  
iteration: 72 HingeLoss: 0.07170699862335525  
iteration: 73 HingeLoss: 0.07020266212835169  
iteration: 74 HingeLoss: 0.06872988501156291

# Output\_hinge\_train.txt

```

iteration: 75 HingeLoss: 0.0672880051908307
iteration: 76 HingeLoss: 0.06587637447377562
iteration: 77 HingeLoss: 0.06449435826640446
iteration: 78 HingeLoss: 0.06314133528783031
iteration: 79 HingeLoss: 0.06181669729097791
iteration: 80 HingeLoss: 0.06051984878914823
iteration: 81 HingeLoss: 0.05925020678831906
iteration: 82 HingeLoss: 0.05800720052506228
iteration: 83 HingeLoss: 0.056790271209958894
iteration: 84 HingeLoss: 0.055598871776397
iteration: 85 HingeLoss: 0.05443246663463981
iteration: 86 HingeLoss: 0.05329053143105317
iteration: 87 HingeLoss: 0.052172552812383775
iteration: 88 HingeLoss: 0.051078028194983235
iteration: 89 HingeLoss: 0.05000646553887304
iteration: 90 HingeLoss: 0.04895738312654961
iteration: 91 HingeLoss: 0.04793030934642978
iteration: 92 HingeLoss: 0.04692478248083926
iteration: 93 HingeLoss: 0.04594035049844925
iteration: 94 HingeLoss: 0.044976570851066815
iteration: 95 HingeLoss: 0.04403301027468904
iteration: 96 HingeLoss: 0.043109244594730645
iteration: 97 HingeLoss: 0.04220485853533749
iteration: 98 HingeLoss: 0.04131944553270082
iteration: 99 HingeLoss: 0.04045260755228772
[-7.94933003e-04 1.94359872e-04 -5.13605043e-04 ... 6.34901754e-04
-6.85688922e-05 3.30197941e-05]

```

## CROSS VALIDATION 9

```

iteration: 0 HingeLoss: 11.305790047459968
iteration: 1 HingeLoss: 0.7272308875417309
iteration: 2 HingeLoss: 0.3087166517505136
iteration: 3 HingeLoss: 0.3022401050429466
iteration: 4 HingeLoss: 0.295899429390658
iteration: 5 HingeLoss: 0.2896917743635501
iteration: 6 HingeLoss: 0.28361434933051466
iteration: 7 HingeLoss: 0.2776644222049133
iteration: 8 HingeLoss: 0.27183931821637625
iteration: 9 HingeLoss: 0.26613641870836957
iteration: 10 HingeLoss: 0.2605531599609849
iteration: 11 HingeLoss: 0.2550870320384291
iteration: 12 HingeLoss: 0.24973557766068916
iteration: 13 HingeLoss: 0.2444963910988714
iteration: 14 HingeLoss: 0.23936711709371322
iteration: 15 HingeLoss: 0.2343454497967841
iteration: 16 HingeLoss: 0.2294291317338983
iteration: 17 HingeLoss: 0.22461595279027616
iteration: 18 HingeLoss: 0.2199037492169928
iteration: 19 HingeLoss: 0.21529040265827237
iteration: 20 HingeLoss: 0.21077383919918824
iteration: 21 HingeLoss: 0.20635202843334102
iteration: 22 HingeLoss: 0.2020229825500961
iteration: 23 HingeLoss: 0.19778475544097007

```

Output\_hinge\_train.txt

iteration: 24 HingeLoss: 0.19363544182476333  
iteration: 25 HingeLoss: 0.1895731763910481  
iteration: 26 HingeLoss: 0.18559613296162328  
iteration: 27 HingeLoss: 0.18170252366956224  
iteration: 28 HingeLoss: 0.17789059815548366  
iteration: 29 HingeLoss: 0.17415864278068244  
iteration: 30 HingeLoss: 0.17050497985676896  
iteration: 31 HingeLoss: 0.16692796689147052  
iteration: 32 HingeLoss: 0.1634259958502535  
iteration: 33 HingeLoss: 0.15999749243343692  
iteration: 34 HingeLoss: 0.15664091536847138  
iteration: 35 HingeLoss: 0.15335475571706475  
iteration: 36 HingeLoss: 0.15013753619684345  
iteration: 37 HingeLoss: 0.1469878105172463  
iteration: 38 HingeLoss: 0.1439041627293477  
iteration: 39 HingeLoss: 0.14088520658932352  
iteration: 40 HingeLoss: 0.13792958493526916  
iteration: 41 HingeLoss: 0.13503596907709225  
iteration: 42 HingeLoss: 0.1322030581992037  
iteration: 43 HingeLoss: 0.12942957877574107  
iteration: 44 HingeLoss: 0.12671428399805862  
iteration: 45 HingeLoss: 0.12405595321422862  
iteration: 46 HingeLoss: 0.1214533913803014  
iteration: 47 HingeLoss: 0.11890542852307723  
iteration: 48 HingeLoss: 0.11641091921414845  
iteration: 49 HingeLoss: 0.11396874205497634  
iteration: 50 HingeLoss: 0.11157779917276922  
iteration: 51 HingeLoss: 0.10923701572693824  
iteration: 52 HingeLoss: 0.10694533942590585  
iteration: 53 HingeLoss: 0.10470174005405139  
iteration: 54 HingeLoss: 0.10250520900858134  
iteration: 55 HingeLoss: 0.10035475884611489  
iteration: 56 HingeLoss: 0.09824942283878242  
iteration: 57 HingeLoss: 0.09618825453963574  
iteration: 58 HingeLoss: 0.09417032735717609  
iteration: 59 HingeLoss: 0.09219473413880802  
iteration: 60 HingeLoss: 0.09026058676303177  
iteration: 61 HingeLoss: 0.0883670157401911  
iteration: 62 HingeLoss: 0.08651316982159729  
iteration: 63 HingeLoss: 0.08469821561685276  
iteration: 64 HingeLoss: 0.0829213372192034  
iteration: 65 HingeLoss: 0.08118173583875024  
iteration: 66 HingeLoss: 0.07947862944335593  
iteration: 67 HingeLoss: 0.07781125240708488  
iteration: 68 HingeLoss: 0.07617885516601862  
iteration: 69 HingeLoss: 0.07458070388129162  
iteration: 70 HingeLoss: 0.07301608010919673  
iteration: 71 HingeLoss: 0.07148428047821076  
iteration: 72 HingeLoss: 0.06998461637279643  
iteration: 73 HingeLoss: 0.06851641362383731  
iteration: 74 HingeLoss: 0.0670790122055673  
iteration: 75 HingeLoss: 0.06567176593885833

# Output\_hinge\_train.txt

```

iteration: 76 HingeLoss: 0.06429404220073248
iteration: 77 HingeLoss: 0.06294522163996844
iteration: 78 HingeLoss: 0.06162469789867429
iteration: 79 HingeLoss: 0.06033187733970099
iteration: 80 HingeLoss: 0.05906617877977509
iteration: 81 HingeLoss: 0.05782703322822948
iteration: 82 HingeLoss: 0.05661388363121546
iteration: 83 HingeLoss: 0.055426184621281134
iteration: 84 HingeLoss: 0.05426340227220316
iteration: 85 HingeLoss: 0.05312501385896193
iteration: 86 HingeLoss: 0.05201050762275231
iteration: 87 HingeLoss: 0.05091938254092407
iteration: 88 HingeLoss: 0.04985114810174884
iteration: 89 HingeLoss: 0.04880532408391218
iteration: 90 HingeLoss: 0.047781440340631476
iteration: 91 HingeLoss: 0.04677903658830328
iteration: 92 HingeLoss: 0.045797662199583984
iteration: 93 HingeLoss: 0.044836876000812056
iteration: 94 HingeLoss: 0.04389624607367966
iteration: 95 HingeLoss: 0.04297534956106526
iteration: 96 HingeLoss: 0.04207377247693964
iteration: 97 HingeLoss: 0.041191109520259714
iteration: 98 HingeLoss: 0.0403269638927668
iteration: 99 HingeLoss: 0.03948094712060727
[-1.04788956e-03 -9.61675301e-05 -2.96710925e-04 ... 7.17600805e-04
 5.68616474e-04 6.97473877e-05]

```

## CROSS VALIDATION 10

```

iteration: 0 HingeLoss: 28.877453568629853
iteration: 1 HingeLoss: 0.3396071470290374
iteration: 2 HingeLoss: 0.33248255061518867
iteration: 3 HingeLoss: 0.32550742064957067
iteration: 4 HingeLoss: 0.3186786214852152
iteration: 5 HingeLoss: 0.3119930832576888
iteration: 6 HingeLoss: 0.30544780050504616
iteration: 7 HingeLoss: 0.2990398308167341
iteration: 8 HingeLoss: 0.2927662935108401
iteration: 9 HingeLoss: 0.2866243683390925
iteration: 10 HingeLoss: 0.2806112942190247
iteration: 11 HingeLoss: 0.27472436799274186
iteration: 12 HingeLoss: 0.2689609432117239
iteration: 13 HingeLoss: 0.2633184289471235
iteration: 14 HingeLoss: 0.257794288625022
iteration: 15 HingeLoss: 0.2523860388861216
iteration: 16 HingeLoss: 0.24709124846935876
iteration: 17 HingeLoss: 0.24190753711893875
iteration: 18 HingeLoss: 0.23683257451429945
iteration: 19 HingeLoss: 0.23186407922252394
iteration: 20 HingeLoss: 0.2269998176727283
iteration: 21 HingeLoss: 0.2222376031519686
iteration: 22 HingeLoss: 0.21757529482221066
iteration: 23 HingeLoss: 0.21301079675792262
iteration: 24 HingeLoss: 0.2085420570038597

```

# Output\_hinge\_train.txt

```

iteration: 25 HingeLoss: 0.20416706665261342
iteration: 26 HingeLoss: 0.19988385894151406
iteration: 27 HingeLoss: 0.19569050836847926
iteration: 28 HingeLoss: 0.19158512982641013
iteration: 29 HingeLoss: 0.18756587775574846
iteration: 30 HingeLoss: 0.18363094531481028
iteration: 31 HingeLoss: 0.17977856356752728
iteration: 32 HingeLoss: 0.17600700068822614
iteration: 33 HingeLoss: 0.17231456118309293
iteration: 34 HingeLoss: 0.16869958512796884
iteration: 35 HingeLoss: 0.1651604474221369
iteration: 36 HingeLoss: 0.16169555705776303
iteration: 37 HingeLoss: 0.158303356404664
iteration: 38 HingeLoss: 0.15498232051007949
iteration: 39 HingeLoss: 0.15173095641313472
iteration: 40 HingeLoss: 0.14854780247368468
iteration: 41 HingeLoss: 0.14543142771523873
iteration: 42 HingeLoss: 0.14238043118166968
iteration: 43 HingeLoss: 0.13939344130741818
iteration: 44 HingeLoss: 0.13646911530091063
iteration: 45 HingeLoss: 0.13360613854091086
iteration: 46 HingeLoss: 0.1308032239855368
iteration: 47 HingeLoss: 0.128059111593675
iteration: 48 HingeLoss: 0.12537256775853325
iteration: 49 HingeLoss: 0.12274238475307639
iteration: 50 HingeLoss: 0.12016738018709708
iteration: 51 HingeLoss: 0.11764639647567537
iteration: 52 HingeLoss: 0.11517830031879098
iteration: 53 HingeLoss: 0.1127619821918516
iteration: 54 HingeLoss: 0.1103963558469094
iteration: 55 HingeLoss: 0.10808035782434253
iteration: 56 HingeLoss: 0.10581294697477944
iteration: 57 HingeLoss: 0.10359310399105442
iteration: 58 HingeLoss: 0.10141983094998085
iteration: 59 HingeLoss: 0.09929215086373815
iteration: 60 HingeLoss: 0.09720910724067028
iteration: 61 HingeLoss: 0.09516976365529782
iteration: 62 HingeLoss: 0.09317320332735102
iteration: 63 HingeLoss: 0.09121852870963432
iteration: 64 HingeLoss: 0.08930486108453677
iteration: 65 HingeLoss: 0.08743134016900744
iteration: 66 HingeLoss: 0.08559712372781797
iteration: 67 HingeLoss: 0.08380138719493865
iteration: 68 HingeLoss: 0.08204332330285705
iteration: 69 HingeLoss: 0.08032214171967388
iteration: 70 HingeLoss: 0.07863706869381168
iteration: 71 HingeLoss: 0.07698734670617756
iteration: 72 HingeLoss: 0.07537223412962252
iteration: 73 HingeLoss: 0.07379100489554592
iteration: 74 HingeLoss: 0.07224294816749316
iteration: 75 HingeLoss: 0.07072736802160191
iteration: 76 HingeLoss: 0.06924358313375155

```

Output\_hinge\_train.txt

```
iteration: 77 HingeLoss: 0.06779092647327623
iteration: 78 HingeLoss: 0.06636874500310332
iteration: 79 HingeLoss: 0.06497639938618283
iteration: 80 HingeLoss: 0.0636132636980755
iteration: 81 HingeLoss: 0.06227872514557037
iteration: 82 HingeLoss: 0.06097218379120581
iteration: 83 HingeLoss: 0.05969305228356943
iteration: 84 HingeLoss: 0.058440755593256156
iteration: 85 HingeLoss: 0.05721473075436569
iteration: 86 HingeLoss: 0.0560144266114231
iteration: 87 HingeLoss: 0.05483930357160847
iteration: 88 HingeLoss: 0.05368883336218488
iteration: 89 HingeLoss: 0.052562498793015056
iteration: 90 HingeLoss: 0.05145979352406023
iteration: 91 HingeLoss: 0.05038022183775656
iteration: 92 HingeLoss: 0.04932329841616704
iteration: 93 HingeLoss: 0.0482885481228083
iteration: 94 HingeLoss: 0.047275505789054664
iteration: 95 HingeLoss: 0.04628371600502285
iteration: 96 HingeLoss: 0.04531273291484429
iteration: 97 HingeLoss: 0.04436212001623183
iteration: 98 HingeLoss: 0.04343144996425161
iteration: 99 HingeLoss: 0.04252030437921156
[-0.0007716 -0.00014186 -0.00055766 ... 0.00049646 0.00016733
0.00010442]
```

CROSS VALIDATION 11

```
iteration: 0 HingeLoss: 21.046035349749847
iteration: 1 HingeLoss: 1.6374862122417766
iteration: 2 HingeLoss: 1.0967680732454776
iteration: 3 HingeLoss: 0.30857212893838026
iteration: 4 HingeLoss: 0.3020986141655592
iteration: 5 HingeLoss: 0.29576090684125333
iteration: 6 HingeLoss: 0.289556157869767
iteration: 7 HingeLoss: 0.28348157792639966
iteration: 8 HingeLoss: 0.27753443620351387
iteration: 9 HingeLoss: 0.271712059182909
iteration: 10 HingeLoss: 0.26601182943395
iteration: 11 HingeLoss: 0.26043118443691066
iteration: 12 HingeLoss: 0.254967615431
iteration: 13 HingeLoss: 0.24961866628655818
iteration: 14 HingeLoss: 0.24438193240091105
iteration: 15 HingeLoss: 0.2392550596173884
iteration: 16 HingeLoss: 0.23423574316702103
iteration: 17 HingeLoss: 0.22932172663243894
iteration: 18 HingeLoss: 0.2245108009335066
iteration: 19 HingeLoss: 0.21980080333423826
iteration: 20 HingeLoss: 0.21518961647054624
iteration: 21 HingeLoss: 0.2106751673983881
iteration: 22 HingeLoss: 0.20625542666188
iteration: 23 HingeLoss: 0.2019284073809624
iteration: 24 HingeLoss: 0.19769216435820422
iteration: 25 HingeLoss: 0.19354479320434564
```

# Output\_hinge\_train.txt

```

iteration: 26 HingeLoss: 0.18948442948218616
iteration: 27 HingeLoss: 0.1855092478684331
iteration: 28 HingeLoss: 0.18161746133313333
iteration: 29 HingeLoss: 0.17780732033631932
iteration: 30 HingeLoss: 0.17407711204151022
iteration: 31 HingeLoss: 0.17042515954571053
iteration: 32 HingeLoss: 0.16684982112556507
iteration: 33 HingeLoss: 0.16334948949932607
iteration: 34 HingeLoss: 0.15992259110430665
iteration: 35 HingeLoss: 0.15656758538948967
iteration: 36 HingeLoss: 0.15328296412297807
iteration: 37 HingeLoss: 0.15006725071397467
iteration: 38 HingeLoss: 0.1469189995489852
iteration: 39 HingeLoss: 0.14383679534194757
iteration: 40 HingeLoss: 0.1408192524979947
iteration: 41 HingeLoss: 0.1378650144905646
iteration: 42 HingeLoss: 0.13497275325157868
iteration: 43 HingeLoss: 0.13214116857441277
iteration: 44 HingeLoss: 0.12936898752939327
iteration: 45 HingeLoss: 0.1266549638915563
iteration: 46 HingeLoss: 0.12399787758041123
iteration: 47 HingeLoss: 0.12139653411145673
iteration: 48 HingeLoss: 0.11884976405920517
iteration: 49 HingeLoss: 0.11635642253147058
iteration: 50 HingeLoss: 0.11391538865468617
iteration: 51 HingeLoss: 0.11152556507001946
iteration: 52 HingeLoss: 0.10918587744005809
iteration: 53 HingeLoss: 0.10689527396584483
iteration: 54 HingeLoss: 0.10465272491404497
iteration: 55 HingeLoss: 0.1024572221540328
iteration: 56 HingeLoss: 0.10030777870469013
iteration: 57 HingeLoss: 0.0982034282907118
iteration: 58 HingeLoss: 0.09614322490821986
iteration: 59 HingeLoss: 0.0941262423994908
iteration: 60 HingeLoss: 0.09215157403660407
iteration: 61 HingeLoss: 0.09021833211382568
iteration: 62 HingeLoss: 0.08832564754854288
iteration: 63 HingeLoss: 0.08647266949057109
iteration: 64 HingeLoss: 0.08465856493965664
iteration: 65 HingeLoss: 0.08288251837100455
iteration: 66 HingeLoss: 0.08114373136866175
iteration: 67 HingeLoss: 0.07944142226659204
iteration: 68 HingeLoss: 0.07777482579728034
iteration: 69 HingeLoss: 0.07614319274770957
iteration: 70 HingeLoss: 0.07454578962255409
iteration: 71 HingeLoss: 0.07298189831443933
iteration: 72 HingeLoss: 0.07145081578111892
iteration: 73 HingeLoss: 0.06995185372942453
iteration: 74 HingeLoss: 0.06848433830584572
iteration: 75 HingeLoss: 0.06704760979360119
iteration: 76 HingeLoss: 0.06564102231606564
iteration: 77 HingeLoss: 0.06426394354641764

```

# Output\_hinge\_train.txt

```

iteration: 78 HingeLoss: 0.06291575442337949
iteration: 79 HingeLoss: 0.061595848872919814
iteration: 80 HingeLoss: 0.06030363353579547
iteration: 81 HingeLoss: 0.05903852750080839
iteration: 82 HingeLoss: 0.05779996204365916
iteration: 83 HingeLoss: 0.05658738037127865
iteration: 84 HingeLoss: 0.0554002373715236
iteration: 85 HingeLoss: 0.054237999368123214
iteration: 86 HingeLoss: 0.05310014388076678
iteration: 87 HingeLoss: 0.0519861593902242
iteration: 88 HingeLoss: 0.05089554510839435
iteration: 89 HingeLoss: 0.049827810753177326
iteration: 90 HingeLoss: 0.04878247632806976
iteration: 91 HingeLoss: 0.04775907190638394
iteration: 92 HingeLoss: 0.04675713741999379
iteration: 93 HingeLoss: 0.04577622245251273
iteration: 94 HingeLoss: 0.04481588603681054
iteration: 95 HingeLoss: 0.04387569645677791
iteration: 96 HingeLoss: 0.04295523105324992
iteration: 97 HingeLoss: 0.04205407603400098
iteration: 98 HingeLoss: 0.041171826287725935
iteration: 99 HingeLoss: 0.04030808520192347
[-1.02912840e-03 -1.03762318e-04 -1.84274851e-04 ... 7.82737689e-04
 4.72386551e-04 7.07079612e-05]

```

## CROSS VALIDATION 12

```

iteration: 0 HingeLoss: 19.702011631294024
iteration: 1 HingeLoss: 4.847125252984873
iteration: 2 HingeLoss: 0.33796445063139513
iteration: 3 HingeLoss: 0.3308743162392265
iteration: 4 HingeLoss: 0.323932925318761
iteration: 5 HingeLoss: 0.31713715739030734
iteration: 6 HingeLoss: 0.3104839574385173
iteration: 7 HingeLoss: 0.3039703345390118
iteration: 8 HingeLoss: 0.2975933605138219
iteration: 9 HingeLoss: 0.2913501686150346
iteration: 10 HingeLoss: 0.2852379522360564
iteration: 11 HingeLoss: 0.27925396364991295
iteration: 12 HingeLoss: 0.27339551277401564
iteration: 13 HingeLoss: 0.267659965960846
iteration: 14 HingeLoss: 0.26204474481400586
iteration: 15 HingeLoss: 0.25654732502910915
iteration: 16 HingeLoss: 0.25116523525898826
iteration: 17 HingeLoss: 0.24589605600270883
iteration: 18 HingeLoss: 0.2407374185178898
iteration: 19 HingeLoss: 0.23568700375584406
iteration: 20 HingeLoss: 0.23074254131905647
iteration: 21 HingeLoss: 0.22590180844053576
iteration: 22 HingeLoss: 0.22116262898457525
iteration: 23 HingeLoss: 0.21652287246847896
iteration: 24 HingeLoss: 0.21198045310480973
iteration: 25 HingeLoss: 0.20753332886373058
iteration: 26 HingeLoss: 0.2031795005550166

```



Output\_hinge\_train.txt

iteration: 27 HingeLoss: 0.1989170109293255  
iteration: 28 HingeLoss: 0.19474394379832258  
iteration: 29 HingeLoss: 0.19065842317326448  
iteration: 30 HingeLoss: 0.18665861242165457  
iteration: 31 HingeLoss: 0.18274271344159104  
iteration: 32 HingeLoss: 0.17890896585343558  
iteration: 33 HingeLoss: 0.17515564620844057  
iteration: 34 HingeLoss: 0.17148106721397877  
iteration: 35 HingeLoss: 0.1678835769750257  
iteration: 36 HingeLoss: 0.16436155825155616  
iteration: 37 HingeLoss: 0.1609134277315188  
iteration: 38 HingeLoss: 0.1575376353190639  
iteration: 39 HingeLoss: 0.1542326634377023  
iteration: 40 HingeLoss: 0.15099702634808412  
iteration: 41 HingeLoss: 0.14782926948008918  
iteration: 42 HingeLoss: 0.14472796877893038  
iteration: 43 HingeLoss: 0.1416917300649736  
iteration: 44 HingeLoss: 0.13871918840698952  
iteration: 45 HingeLoss: 0.1358090075085529  
iteration: 46 HingeLoss: 0.13295987910731508  
iteration: 47 HingeLoss: 0.13017052238687854  
iteration: 48 HingeLoss: 0.12743968340101033  
iteration: 49 HingeLoss: 0.12476613450993472  
iteration: 50 HingeLoss: 0.1221486738284513  
iteration: 51 HingeLoss: 0.11958612468563207  
iteration: 52 HingeLoss: 0.11707733509585212  
iteration: 53 HingeLoss: 0.11462117724091875  
iteration: 54 HingeLoss: 0.11221654696306443  
iteration: 55 HingeLoss: 0.10986236326857589  
iteration: 56 HingeLoss: 0.10755756784183734  
iteration: 57 HingeLoss: 0.10530112456956808  
iteration: 58 HingeLoss: 0.10309201907504073  
iteration: 59 HingeLoss: 0.10092925826207222  
iteration: 60 HingeLoss: 0.09881186986857973  
iteration: 61 HingeLoss: 0.09673890202950432  
iteration: 62 HingeLoss: 0.09470942284890227  
iteration: 63 HingeLoss: 0.09272251998101519  
iteration: 64 HingeLoss: 0.09077730022012694  
iteration: 65 HingeLoss: 0.08887288909902682  
iteration: 66 HingeLoss: 0.08700843049589516  
iteration: 67 HingeLoss: 0.08518308624943655  
iteration: 68 HingeLoss: 0.08339603578208754  
iteration: 69 HingeLoss: 0.08164647573112827  
iteration: 70 HingeLoss: 0.07993361958753346  
iteration: 71 HingeLoss: 0.0782566973424001  
iteration: 72 HingeLoss: 0.07661495514079192  
iteration: 73 HingeLoss: 0.07500765494284707  
iteration: 74 HingeLoss: 0.07343407419199402  
iteration: 75 HingeLoss: 0.07189350549012914  
iteration: 76 HingeLoss: 0.07038525627960766  
iteration: 77 HingeLoss: 0.06890864853190726  
iteration: 78 HingeLoss: 0.06746301844282196

# Output\_hinge\_train.txt

```

iteration: 79 HingeLoss: 0.06604771613405153
iteration: 80 HingeLoss: 0.06466210536105053
iteration: 81 HingeLoss: 0.06330556322700688
iteration: 82 HingeLoss: 0.061977479902820425
iteration: 83 HingeLoss: 0.06067725835295636
iteration: 84 HingeLoss: 0.05940431406704978
iteration: 85 HingeLoss: 0.058158074797141086
iteration: 86 HingeLoss: 0.056937980300423595
iteration: 87 HingeLoss: 0.055743482087388316
iteration: 88 HingeLoss: 0.05457404317525236
iteration: 89 HingeLoss: 0.05342913784655978
iteration: 90 HingeLoss: 0.05230825141284734
iteration: 91 HingeLoss: 0.05121087998326785
iteration: 92 HingeLoss: 0.05013653023806761
iteration: 93 HingeLoss: 0.0490847192068162
iteration: 94 HingeLoss: 0.048054974051288765
iteration: 95 HingeLoss: 0.047046831852902884
iteration: 96 HingeLoss: 0.046059839404615374
iteration: 97 HingeLoss: 0.04509355300718419
iteration: 98 HingeLoss: 0.044147538269705154
iteration: 99 HingeLoss: 0.043221369914332765
[-1.54691954e-03 -1.97480050e-04 -6.40781005e-04 ... 7.28231770e-04
 4.41491697e-04 3.53283939e-05]

```

## CROSS VALIDATION 13

```

iteration: 0 HingeLoss: 21.051262804074256
iteration: 1 HingeLoss: 1.6362253074876194
iteration: 2 HingeLoss: 1.0989434467160175
iteration: 3 HingeLoss: 0.3085772309232512
iteration: 4 HingeLoss: 0.302103609116219
iteration: 5 HingeLoss: 0.2957657970031656
iteration: 6 HingeLoss: 0.2895609454412881
iteration: 7 HingeLoss: 0.283486265059767
iteration: 8 HingeLoss: 0.2775390250058129
iteration: 9 HingeLoss: 0.2717165517170208
iteration: 10 HingeLoss: 0.26601622771947864
iteration: 11 HingeLoss: 0.2604354904510911
iteration: 12 HingeLoss: 0.25497183110958693
iteration: 13 HingeLoss: 0.2496227935246963
iteration: 14 HingeLoss: 0.2443859730539867
iteration: 15 HingeLoss: 0.23925901550186401
iteration: 16 HingeLoss: 0.23423961606125157
iteration: 17 HingeLoss: 0.2293255182774715
iteration: 18 HingeLoss: 0.22451451303386266
iteration: 19 HingeLoss: 0.21980443755868057
iteration: 20 HingeLoss: 0.21519317445282873
iteration: 21 HingeLoss: 0.21067865073798997
iteration: 22 HingeLoss: 0.20625883692472524
iteration: 23 HingeLoss: 0.20193174610012352
iteration: 24 HingeLoss: 0.19769543303459158
iteration: 25 HingeLoss: 0.19354799330738212
iteration: 26 HingeLoss: 0.1894875624504676
iteration: 27 HingeLoss: 0.1855123151103753

```

# Output\_hinge\_train.txt

```

iteration: 28 HingeLoss: 0.18162046422760456
iteration: 29 HingeLoss: 0.17781026023326144
iteration: 30 HingeLoss: 0.17407999026254428
iteration: 31 HingeLoss: 0.1704279773847313
iteration: 32 HingeLoss: 0.16685257984932275
iteration: 33 HingeLoss: 0.16335219034799636
iteration: 34 HingeLoss: 0.15992523529204705
iteration: 35 HingeLoss: 0.15657017410498608
iteration: 36 HingeLoss: 0.15328549852997914
iteration: 37 HingeLoss: 0.15006973195181483
iteration: 38 HingeLoss: 0.14692142873309696
iteration: 39 HingeLoss: 0.14383917356436257
iteration: 40 HingeLoss: 0.14082158082783533
iteration: 41 HingeLoss: 0.1378672939745238
iteration: 42 HingeLoss: 0.1349749849143911
iteration: 43 HingeLoss: 0.13214335341931496
iteration: 44 HingeLoss: 0.12937112653857535
iteration: 45 HingeLoss: 0.12665705802660293
iteration: 46 HingeLoss: 0.12399992778273379
iteration: 47 HingeLoss: 0.12139854130271717
iteration: 48 HingeLoss: 0.11885172914172969
iteration: 49 HingeLoss: 0.11635834638865572
iteration: 50 HingeLoss: 0.11391727215139559
iteration: 51 HingeLoss: 0.11152740905297305
iteration: 52 HingeLoss: 0.1091876827382123
iteration: 53 HingeLoss: 0.10689704139076561
iteration: 54 HingeLoss: 0.10465445526027246
iteration: 55 HingeLoss: 0.1024589161994385
iteration: 56 HingeLoss: 0.10030943721082666
iteration: 57 HingeLoss: 0.0982050520031551
iteration: 58 HingeLoss: 0.09614481455690467
iteration: 59 HingeLoss: 0.09412779869903842
iteration: 60 HingeLoss: 0.09215309768664394
iteration: 61 HingeLoss: 0.09021982379930975
iteration: 62 HingeLoss: 0.08832710794005348
iteration: 63 HingeLoss: 0.08647409924462245
iteration: 64 HingeLoss: 0.08465996469899008
iteration: 65 HingeLoss: 0.08288388876487729
iteration: 66 HingeLoss: 0.08114507301312986
iteration: 67 HingeLoss: 0.07944273576478746
iteration: 68 HingeLoss: 0.07777611173968195
iteration: 69 HingeLoss: 0.07614445171240855
iteration: 70 HingeLoss: 0.07454702217551396
iteration: 71 HingeLoss: 0.0729831050097502
iteration: 72 HingeLoss: 0.07145199716124678
iteration: 73 HingeLoss: 0.06995301032545496
iteration: 74 HingeLoss: 0.06848547063772263
iteration: 75 HingeLoss: 0.06704871837036076
iteration: 76 HingeLoss: 0.06564210763606498
iteration: 77 HingeLoss: 0.06426500609755881
iteration: 78 HingeLoss: 0.06291679468332878
iteration: 79 HingeLoss: 0.061596867309322824

```

# Output\_hinge\_train.txt

```

iteration: 80 HingeLoss: 0.060304630606486845
iteration: 81 HingeLoss: 0.05903950365401815
iteration: 82 HingeLoss: 0.057800917718213746
iteration: 83 HingeLoss: 0.05658831599679848
iteration: 84 HingeLoss: 0.055401153368616035
iteration: 85 HingeLoss: 0.054238896148571816
iteration: 86 HingeLoss: 0.053101021847716215
iteration: 87 HingeLoss: 0.051987018938361676
iteration: 88 HingeLoss: 0.05089638662412694
iteration: 89 HingeLoss: 0.049828634614805675
iteration: 90 HingeLoss: 0.048783282905958215
iteration: 91 HingeLoss: 0.04775986156312693
iteration: 92 HingeLoss: 0.04675791051057894
iteration: 93 HingeLoss: 0.04577697932448043
iteration: 94 HingeLoss: 0.044816627030410096
iteration: 95 HingeLoss: 0.04387642190512055
iteration: 96 HingeLoss: 0.0429559412824586
iteration: 97 HingeLoss: 0.04205477136335697
iteration: 98 HingeLoss: 0.04117250702981225
iteration: 99 HingeLoss: 0.04030875166276552
[-1.02908954e-03 -1.03744436e-04 -1.84274485e-04 ... 7.82737674e-04
 4.72383813e-04 7.07149076e-05]

```

## CROSS VALIDATION 14

```

iteration: 0 HingeLoss: 21.051262804074256
iteration: 1 HingeLoss: 0.2866894114862837
iteration: 2 HingeLoss: 0.28067497283023
iteration: 3 HingeLoss: 0.2747867106944736
iteration: 4 HingeLoss: 0.26902197802994054
iteration: 5 HingeLoss: 0.26337818331982893
iteration: 6 HingeLoss: 0.2578527894145999
iteration: 7 HingeLoss: 0.2524433123914116
iteration: 8 HingeLoss: 0.24714732043747858
iteration: 9 HingeLoss: 0.24196243275685914
iteration: 10 HingeLoss: 0.23688631850017583
iteration: 11 HingeLoss: 0.23191669571678994
iteration: 12 HingeLoss: 0.2270513303289579
iteration: 13 HingeLoss: 0.22228803512750875
iteration: 14 HingeLoss: 0.21762466878859146
iteration: 15 HingeLoss: 0.21305913491105033
iteration: 16 HingeLoss: 0.20858938107399336
iteration: 17 HingeLoss: 0.20421339791413468
iteration: 18 HingeLoss: 0.199929218222491
iteration: 19 HingeLoss: 0.19573491606002869
iteration: 20 HingeLoss: 0.1916286058918654
iteration: 21 HingeLoss: 0.1876084417396331
iteration: 22 HingeLoss: 0.1836726163516249
iteration: 23 HingeLoss: 0.17981936039035068
iteration: 24 HingeLoss: 0.17604694163713713
iteration: 25 HingeLoss: 0.1723536642134151
iteration: 26 HingeLoss: 0.1687378678183422
iteration: 27 HingeLoss: 0.16519792698242025
iteration: 28 HingeLoss: 0.16173225033677083

```

Output\_hinge\_train.txt

iteration: 29 HingeLoss: 0.15833927989774021  
iteration: 30 HingeLoss: 0.15501749036651352  
iteration: 31 HingeLoss: 0.151765388443421  
iteration: 32 HingeLoss: 0.14858151215663046  
iteration: 33 HingeLoss: 0.14546443020492222  
iteration: 34 HingeLoss: 0.14241274131425258  
iteration: 35 HingeLoss: 0.13942507360781548  
iteration: 36 HingeLoss: 0.13650008398931984  
iteration: 37 HingeLoss: 0.1336364575392052  
iteration: 38 HingeLoss: 0.1308329069235231  
iteration: 39 HingeLoss: 0.12808817181522159  
iteration: 40 HingeLoss: 0.12540101832756795  
iteration: 41 HingeLoss: 0.12277023845946003  
iteration: 42 HingeLoss: 0.12019464955237259  
iteration: 43 HingeLoss: 0.11767309375869718  
iteration: 44 HingeLoss: 0.11520443752123581  
iteration: 45 HingeLoss: 0.11278757106361358  
iteration: 46 HingeLoss: 0.11042140789138268  
iteration: 47 HingeLoss: 0.10810488430359193  
iteration: 48 HingeLoss: 0.10583695891460405  
iteration: 49 HingeLoss: 0.10361661218594359  
iteration: 50 HingeLoss: 0.10144284596796702  
iteration: 51 HingeLoss: 0.09931468305114773  
iteration: 52 HingeLoss: 0.09723116672677481  
iteration: 53 HingeLoss: 0.0951913603568674  
iteration: 54 HingeLoss: 0.09319434695311257  
iteration: 55 HingeLoss: 0.091239228764636  
iteration: 56 HingeLoss: 0.08932512687442085  
iteration: 57 HingeLoss: 0.08745118080419384  
iteration: 58 HingeLoss: 0.08561654812759964  
iteration: 59 HingeLoss: 0.08382040409149123  
iteration: 60 HingeLoss: 0.10149376816728545  
iteration: 61 HingeLoss: 0.09936453695693402  
iteration: 62 HingeLoss: 0.09727997475068995  
iteration: 63 HingeLoss: 0.09523914444039969  
iteration: 64 HingeLoss: 0.09324112857744118  
iteration: 65 HingeLoss: 0.0912850289602879  
iteration: 66 HingeLoss: 0.08936996623072485  
iteration: 67 HingeLoss: 0.08749507947853653  
iteration: 68 HingeLoss: 0.08565952585448727  
iteration: 69 HingeLoss: 0.08386248019142098  
iteration: 70 HingeLoss: 0.08210313463331001  
iteration: 71 HingeLoss: 0.08038069827208644  
iteration: 72 HingeLoss: 0.07869439679209142  
iteration: 73 HingeLoss: 0.0770434721219843  
iteration: 74 HingeLoss: 0.07542718209395437  
iteration: 75 HingeLoss: 0.07384480011008122  
iteration: 76 HingeLoss: 0.07229561481569556  
iteration: 77 HingeLoss: 0.07077892977959158  
iteration: 78 HingeLoss: 0.069294063180949  
iteration: 79 HingeLoss: 0.06784034750282228  
iteration: 80 HingeLoss: 0.06641712923206097

# Output\_hinge\_train.txt

```

iteration: 81 HingeLoss: 0.06502376856552468
iteration: 82 HingeLoss: 0.06365963912246188
iteration: 83 HingeLoss: 0.06232412766292238
iteration: 84 HingeLoss: 0.06101663381207732
iteration: 85 HingeLoss: 0.05973656979032255
iteration: 86 HingeLoss: 0.0584833601490444
iteration: 87 HingeLoss: 0.057256441511928456
iteration: 88 HingeLoss: 0.05605526232169563
iteration: 89 HingeLoss: 0.05487928259215137
iteration: 90 HingeLoss: 0.05372797366543668
iteration: 91 HingeLoss: 0.052600817974371716
iteration: 92 HingeLoss: 0.05149730880978491
iteration: 93 HingeLoss: 0.050416950092723886
iteration: 94 HingeLoss: 0.04935925615144443
iteration: 95 HingeLoss: 0.048323751503078625
iteration: 96 HingeLoss: 0.04730997063988283
iteration: 97 HingeLoss: 0.04631745781997045
iteration: 98 HingeLoss: 0.045345766862434335
iteration: 99 HingeLoss: 0.04439446094676793
[-9.37497666e-04 -4.40566229e-05 -2.29380638e-04 ... 5.91316523e-04
 5.77299626e-04 6.55305881e-05]

```

## CROSS VALIDATION 15

```

iteration: 0 HingeLoss: 21.051262804074256
iteration: 1 HingeLoss: 1.636225307487621
iteration: 2 HingeLoss: 1.0993040069053506
iteration: 3 HingeLoss: 0.3085833867032352
iteration: 4 HingeLoss: 0.30210963575449223
iteration: 5 HingeLoss: 0.2957716972089833
iteration: 6 HingeLoss: 0.2895667218670691
iteration: 7 HingeLoss: 0.2834919203022844
iteration: 8 HingeLoss: 0.2775445616073625
iteration: 9 HingeLoss: 0.2717219721665639
iteration: 10 HingeLoss: 0.26602153445376087
iteration: 11 HingeLoss: 0.2604406858557372
iteration: 12 HingeLoss: 0.2549769175201744
iteration: 13 HingeLoss: 0.2496277732278044
iteration: 14 HingeLoss: 0.24439084828822472
iteration: 15 HingeLoss: 0.23926378845887772
iteration: 16 HingeLoss: 0.23424428888670817
iteration: 17 HingeLoss: 0.22933009307202457
iteration: 18 HingeLoss: 0.2245189918540962
iteration: 19 HingeLoss: 0.21980882241803362
iteration: 20 HingeLoss: 0.21519746732250045
iteration: 21 HingeLoss: 0.2106828535478259
iteration: 22 HingeLoss: 0.20626295156408486
iteration: 23 HingeLoss: 0.20193577441872967
iteration: 24 HingeLoss: 0.19769937684336183
iteration: 25 HingeLoss: 0.19355185437924272
iteration: 26 HingeLoss: 0.1894913425211509
iteration: 27 HingeLoss: 0.18551601587919975
iteration: 28 HingeLoss: 0.18162408735823884
iteration: 29 HingeLoss: 0.17781380735447203

```

# Output\_hinge\_train.txt

```

iteration: 30 HingeLoss: 0.1740834629689279
iteration: 31 HingeLoss: 0.17043137723743193
iteration: 32 HingeLoss: 0.1668559083767331
iteration: 33 HingeLoss: 0.16335544904644492
iteration: 34 HingeLoss: 0.15992842562647125
iteration: 35 HingeLoss: 0.15657329750959037
iteration: 36 HingeLoss: 0.1532885564088799
iteration: 37 HingeLoss: 0.15007272567967161
iteration: 38 HingeLoss: 0.14692435965573014
iteration: 39 HingeLoss: 0.14384204299935924
iteration: 40 HingeLoss: 0.14082439006514028
iteration: 41 HingeLoss: 0.13787004427702074
iteration: 42 HingeLoss: 0.1349776775184694
iteration: 43 HingeLoss: 0.13214598953542625
iteration: 44 HingeLoss: 0.1293737073517769
iteration: 45 HingeLoss: 0.12665958469709096
iteration: 46 HingeLoss: 0.12400240144636472
iteration: 47 HingeLoss: 0.12140096307151843
iteration: 48 HingeLoss: 0.11885410010439969
iteration: 49 HingeLoss: 0.11636066761105288
iteration: 50 HingeLoss: 0.11391954467701795
iteration: 51 HingeLoss: 0.11152963390342707
iteration: 52 HingeLoss: 0.10918986091367228
iteration: 53 HingeLoss: 0.1068991738704233
iteration: 54 HingeLoss: 0.10465654300277698
iteration: 55 HingeLoss: 0.10246096014332781
iteration: 56 HingeLoss: 0.10031143827494904
iteration: 57 HingeLoss: 0.09820701108708245
iteration: 58 HingeLoss: 0.0961467325413368
iteration: 59 HingeLoss: 0.09412967644619898
iteration: 60 HingeLoss: 0.09215493604066803
iteration: 61 HingeLoss: 0.09022162358662339
iteration: 62 HingeLoss: 0.08832886996974537
iteration: 63 HingeLoss: 0.0864758243088071
iteration: 64 HingeLoss: 0.08466165357316455
iteration: 65 HingeLoss: 0.08288554220826948
iteration: 66 HingeLoss: 0.08114669176903996
iteration: 67 HingeLoss: 0.07944432056092174
iteration: 68 HingeLoss: 0.07777766328848043
iteration: 69 HingeLoss: 0.07614597071136497
iteration: 70 HingeLoss: 0.0745485093074893
iteration: 71 HingeLoss: 0.07298456094327985
iteration: 72 HingeLoss: 0.0714534225508409
iteration: 73 HingeLoss: 0.06995440581189279
iteration: 74 HingeLoss: 0.06848683684834059
iteration: 75 HingeLoss: 0.06705005591933438
iteration: 76 HingeLoss: 0.06564341712468501
iteration: 77 HingeLoss: 0.0642662881145016
iteration: 78 HingeLoss: 0.0629180498049209
iteration: 79 HingeLoss: 0.061598096099800076
iteration: 80 HingeLoss: 0.06030583361824809
iteration: 81 HingeLoss: 0.05904068142787328

```

# Output\_hinge\_train.txt

```

iteration: 82 HingeLoss: 0.05780207078362718
iteration: 83 HingeLoss: 0.05658944487212704
iteration: 84 HingeLoss: 0.05540225856134194
iteration: 85 HingeLoss: 0.05423997815553086
iteration: 86 HingeLoss: 0.05310208115532113
iteration: 87 HingeLoss: 0.05198805602282073
iteration: 88 HingeLoss: 0.05089740195165807
iteration: 89 HingeLoss: 0.049829628641846105
iteration: 90 HingeLoss: 0.04878425607936951
iteration: 91 HingeLoss: 0.04776081432039608
iteration: 92 HingeLoss: 0.046758843280014825
iteration: 93 HingeLoss: 0.04577789252540654
iteration: 94 HingeLoss: 0.044817521073352906
iteration: 95 HingeLoss: 0.0438772971919942
iteration: 96 HingeLoss: 0.04295679820674545
iteration: 97 HingeLoss: 0.0420556103102845
iteration: 98 HingeLoss: 0.04117332837652633
iteration: 99 HingeLoss: 0.04030955577849991
[-1.02913461e-03 -1.03766262e-04 -1.84294264e-04 ... 7.82768197e-04
 4.72414297e-04 7.07220057e-05]

```

## CROSS VALIDATION 16

```

iteration: 0 HingeLoss: 21.051262804074256
iteration: 1 HingeLoss: 0.2719396807938039
iteration: 2 HingeLoss: 0.2662346757857645
iteration: 3 HingeLoss: 0.2606493557094962
iteration: 4 HingeLoss: 0.25518120970254227
iteration: 5 HingeLoss: 0.24982777957766672
iteration: 6 HingeLoss: 0.24458665871778498
iteration: 7 HingeLoss: 0.23945549099407692
iteration: 8 HingeLoss: 0.23443196970679703
iteration: 9 HingeLoss: 0.22951383654830454
iteration: 10 HingeLoss: 0.2246988805878491
iteration: 11 HingeLoss: 0.21998493727765397
iteration: 12 HingeLoss: 0.21536988747985003
iteration: 13 HingeLoss: 0.2108516565138253
iteration: 14 HingeLoss: 0.20642821322355787
iteration: 15 HingeLoss: 0.20209756906451723
iteration: 16 HingeLoss: 0.1978577772097201
iteration: 17 HingeLoss: 0.19370693167454084
iteration: 18 HingeLoss: 0.1896431664598822
iteration: 19 HingeLoss: 0.18566465471332147
iteration: 20 HingeLoss: 0.18176960790785518
iteration: 21 HingeLoss: 0.17795627503787212
iteration: 22 HingeLoss: 0.17422294183199505
iteration: 23 HingeLoss: 0.17056792998243503
iteration: 24 HingeLoss: 0.16698959639051403
iteration: 25 HingeLoss: 0.16348633242801508
iteration: 26 HingeLoss: 0.16005656321402884
iteration: 27 HingeLoss: 0.15669874690697058
iteration: 28 HingeLoss: 0.153411374011451
iteration: 29 HingeLoss: 0.15019296669968696
iteration: 30 HingeLoss: 0.14704207814714895

```



Output\_hinge\_train.txt

iteration: 31 HingeLoss: 0.1439572918821459  
iteration: 32 HingeLoss: 0.14093722114905502  
iteration: 33 HingeLoss: 0.13798050828490993  
iteration: 34 HingeLoss: 0.1350858241090683  
iteration: 35 HingeLoss: 0.13225186732568242  
iteration: 36 HingeLoss: 0.1294773639387063  
iteration: 37 HingeLoss: 0.1267610666791748  
iteration: 38 HingeLoss: 0.12410175444449774  
iteration: 39 HingeLoss: 0.12149823174951753  
iteration: 40 HingeLoss: 0.11894932818908222  
iteration: 41 HingeLoss: 0.11645389791189437  
iteration: 42 HingeLoss: 0.11401081910539665  
iteration: 43 HingeLoss: 0.11161899349146515  
iteration: 44 HingeLoss: 0.10927734583268167  
iteration: 45 HingeLoss: 0.10698482344896434  
iteration: 46 HingeLoss: 0.10474039574433908  
iteration: 47 HingeLoss: 0.10254305374363788  
iteration: 48 HingeLoss: 0.10039180963891788  
iteration: 49 HingeLoss: 0.09828569634539498  
iteration: 50 HingeLoss: 0.09622376706669478  
iteration: 51 HingeLoss: 0.09420509486922252  
iteration: 52 HingeLoss: 0.09222877226546372  
iteration: 53 HingeLoss: 0.09029391080602564  
iteration: 54 HingeLoss: 0.08839964068023827  
iteration: 55 HingeLoss: 0.08654511032513333  
iteration: 56 HingeLoss: 0.08472948604262709  
iteration: 57 HingeLoss: 0.08295195162473414  
iteration: 58 HingeLoss: 0.08121170798664366  
iteration: 59 HingeLoss: 0.07950797280749358  
iteration: 60 HingeLoss: 0.07783998017868064  
iteration: 61 HingeLoss: 0.07620698025954854  
iteration: 62 HingeLoss: 0.0746082389403001  
iteration: 63 HingeLoss: 0.07304303751197978  
iteration: 64 HingeLoss: 0.0715106723433811  
iteration: 65 HingeLoss: 0.0700104545647311  
iteration: 66 HingeLoss: 0.06854170975801137  
iteration: 67 HingeLoss: 0.06710377765377556  
iteration: 68 HingeLoss: 0.06569601183432741  
iteration: 69 HingeLoss: 0.06431777944312574  
iteration: 70 HingeLoss: 0.06296846090028592  
iteration: 71 HingeLoss: 0.06164744962404975  
iteration: 72 HingeLoss: 0.060354151758098586  
iteration: 73 HingeLoss: 0.059087985904587054  
iteration: 74 HingeLoss: 0.0578483828627778  
iteration: 75 HingeLoss: 0.05663478537315884  
iteration: 76 HingeLoss: 0.055446647866929634  
iteration: 77 HingeLoss: 0.054283436220742214  
iteration: 78 HingeLoss: 0.05314462751658792  
iteration: 79 HingeLoss: 0.05202970980672109  
iteration: 80 HingeLoss: 0.050938181883515024  
iteration: 81 HingeLoss: 0.0498695530541452  
iteration: 82 HingeLoss: 0.04882334292000033

# Output\_hinge\_train.txt

```

iteration: 83 HingeLoss: 0.0477990811607206
iteration: 84 HingeLoss: 0.04679630732276653
iteration: 85 HingeLoss: 0.04581457061242387
iteration: 86 HingeLoss: 0.04485342969315052
iteration: 87 HingeLoss: 0.043912452487175194
iteration: 88 HingeLoss: 0.042991215981258324
iteration: 89 HingeLoss: 0.04208930603652773
iteration: 90 HingeLoss: 0.041206317202303964
iteration: 91 HingeLoss: 0.040341852533831185
iteration: 92 HingeLoss: 0.03949552341383192
iteration: 93 HingeLoss: 0.03866694937780551
iteration: 94 HingeLoss: 0.03785575794299149
iteration: 95 HingeLoss: 0.037061584440921155
iteration: 96 HingeLoss: 0.03628407185348211
iteration: 97 HingeLoss: 0.04180256757458367
iteration: 98 HingeLoss: 2.64988514013137
iteration: 99 HingeLoss: 1.82142939179626
[-0.00227171 -0.00044884 -0.00125121 ... 0.00169382 0.00097931
0.00023254]

```

## CROSS VALIDATION 17

```

iteration: 0 HingeLoss: 21.051262804074256
iteration: 1 HingeLoss: 1.6368513332608217
iteration: 2 HingeLoss: 1.100260491563364
iteration: 3 HingeLoss: 0.3085889315411302
iteration: 4 HingeLoss: 0.30211506426759105
iteration: 5 HingeLoss: 0.2957770118376563
iteration: 6 HingeLoss: 0.28957192500049
iteration: 7 HingeLoss: 0.2834970142795053
iteration: 8 HingeLoss: 0.27754954871836424
iteration: 9 HingeLoss: 0.2717268546532859
iteration: 10 HingeLoss: 0.2660263145111089
iteration: 11 HingeLoss: 0.2604453656325709
iteration: 12 HingeLoss: 0.254981499120272
iteration: 13 HingeLoss: 0.2496322587108093
iteration: 14 HingeLoss: 0.24439523967057122
iteration: 15 HingeLoss: 0.23926808771469754
iteration: 16 HingeLoss: 0.2342484979487176
iteration: 17 HingeLoss: 0.2293342138323937
iteration: 18 HingeLoss: 0.2245230261652997
iteration: 19 HingeLoss: 0.21981277209368283
iteration: 20 HingeLoss: 0.21520133413815923
iteration: 21 HingeLoss: 0.2106866392418085
iteration: 22 HingeLoss: 0.20626665783823783
iteration: 23 HingeLoss: 0.20193940293919646
iteration: 24 HingeLoss: 0.19770292924133198
iteration: 25 HingeLoss: 0.1935553322516852
iteration: 26 HingeLoss: 0.18949474743153188
iteration: 27 HingeLoss: 0.18551934935818568
iteration: 28 HingeLoss: 0.1816273509043844
iteration: 29 HingeLoss: 0.17781700243489354
iteration: 30 HingeLoss: 0.17408659101996354
iteration: 31 HingeLoss: 0.17043443966528682

```

# Output\_hinge\_train.txt

```

iteration: 32 HingeLoss: 0.16685890655811172
iteration: 33 HingeLoss: 0.16335838432916994
iteration: 34 HingeLoss: 0.15993129933008954
iteration: 35 HingeLoss: 0.15657611092596588
iteration: 36 HingeLoss: 0.15329131080277497
iteration: 37 HingeLoss: 0.15007542228931492
iteration: 38 HingeLoss: 0.14692699969337394
iteration: 39 HingeLoss: 0.14384462765182363
iteration: 40 HingeLoss: 0.14082692049434747
iteration: 41 HingeLoss: 0.13787252162051694
iteration: 42 HingeLoss: 0.1349801028899364
iteration: 43 HingeLoss: 0.13214836402518182
iteration: 44 HingeLoss: 0.1293760320272651
iteration: 45 HingeLoss: 0.12666186060336215
iteration: 46 HingeLoss: 0.12400462960654528
iteration: 47 HingeLoss: 0.12140314448727038
iteration: 48 HingeLoss: 0.11885623575637137
iteration: 49 HingeLoss: 0.11636275845931969
iteration: 50 HingeLoss: 0.11392159166151396
iteration: 51 HingeLoss: 0.11153163794436748
iteration: 52 HingeLoss: 0.1091918229119672
iteration: 53 HingeLoss: 0.10690109470808262
iteration: 54 HingeLoss: 0.10465842354330707
iteration: 55 HingeLoss: 0.10246280123211955
iteration: 56 HingeLoss: 0.10031324073965783
iteration: 57 HingeLoss: 0.09820877573800046
iteration: 58 HingeLoss: 0.09614846017175709
iteration: 59 HingeLoss: 0.09413136783277223
iteration: 60 HingeLoss: 0.09215659194375157
iteration: 61 HingeLoss: 0.09022324475062306
iteration: 62 HingeLoss: 0.08833045712345008
iteration: 63 HingeLoss: 0.08647737816571671
iteration: 64 HingeLoss: 0.0846631748318104
iteration: 65 HingeLoss: 0.08288703155252841
iteration: 66 HingeLoss: 0.0811481498684418
iteration: 67 HingeLoss: 0.0794457480709504
iteration: 68 HingeLoss: 0.07777906085086833
iteration: 69 HingeLoss: 0.07614733895438179
iteration: 70 HingeLoss: 0.07454984884622415
iteration: 71 HingeLoss: 0.07298587237991809
iteration: 72 HingeLoss: 0.07145470647493458
iteration: 73 HingeLoss: 0.06995566280062579
iteration: 74 HingeLoss: 0.06848806746678808
iteration: 75 HingeLoss: 0.0670512607207169
iteration: 76 HingeLoss: 0.06564459665061707
iteration: 77 HingeLoss: 0.06426744289523528
iteration: 78 HingeLoss: 0.06291918035958417
iteration: 79 HingeLoss: 0.06159920293663004
iteration: 80 HingeLoss: 0.060306917234819624
iteration: 81 HingeLoss: 0.05904174231132271
iteration: 82 HingeLoss: 0.05780310941087128
iteration: 83 HingeLoss: 0.056590461710077165

```

# Output\_hinge\_train.txt

```

iteration: 84 HingeLoss: 0.05540325406711438
iteration: 85 HingeLoss: 0.054240952776651946
iteration: 86 HingeLoss: 0.053103035329928654
iteration: 87 HingeLoss: 0.051988990179860764
iteration: 88 HingeLoss: 0.05089831651107788
iteration: 89 HingeLoss: 0.04983052401478285
iteration: 90 HingeLoss: 0.04878513266833524
iteration: 91 HingeLoss: 0.047761672519458474
iteration: 92 HingeLoss: 0.0467596834749745
iteration: 93 HingeLoss: 0.04577871509397039
iteration: 94 HingeLoss: 0.04481832638530397
iteration: 95 HingeLoss: 0.04387808560935781
iteration: 96 HingeLoss: 0.04295757008395211
iteration: 97 HingeLoss: 0.042056365994329055
iteration: 98 HingeLoss: 0.04117406820712411
iteration: 99 HingeLoss: 0.04031028008823932
[-1.02916377e-03 -1.03767962e-04 -1.84303540e-04 ... 7.82769239e-04
 4.72413996e-04 7.07149796e-05]

```

## CROSS VALIDATION 18

```

iteration: 0 HingeLoss: 24.48447424359
iteration: 1 HingeLoss: 15.459754894862424
iteration: 2 HingeLoss: 0.32933012131989764
iteration: 3 HingeLoss: 0.3224211259649576
iteration: 4 HingeLoss: 0.3156570739775517
iteration: 5 HingeLoss: 0.3090349246001297
iteration: 6 HingeLoss: 0.30255170086699695
iteration: 7 HingeLoss: 0.2962044882660311
iteration: 8 HingeLoss: 0.28999043342847014
iteration: 9 HingeLoss: 0.283906742846192
iteration: 10 HingeLoss: 0.2779506816159007
iteration: 11 HingeLoss: 0.2721195722096604
iteration: 12 HingeLoss: 0.26641079327122075
iteration: 13 HingeLoss: 0.2608217784375947
iteration: 14 HingeLoss: 0.2553500151853588
iteration: 15 HingeLoss: 0.2499930437011566
iteration: 16 HingeLoss: 0.24474845577589685
iteration: 17 HingeLoss: 0.23961389372215164
iteration: 18 HingeLoss: 0.23458704931426524
iteration: 19 HingeLoss: 0.22966566275069913
iteration: 20 HingeLoss: 0.224847521638145
iteration: 21 HingeLoss: 0.22013045999695133
iteration: 22 HingeLoss: 0.21551235728741364
iteration: 23 HingeLoss: 0.21099113745649328
iteration: 24 HingeLoss: 0.20656476800453397
iteration: 25 HingeLoss: 0.20223125907155862
iteration: 26 HingeLoss: 0.19798866254273434
iteration: 27 HingeLoss: 0.1938350711726032
iteration: 28 HingeLoss: 0.18976861772768686
iteration: 29 HingeLoss: 0.18578747414707747
iteration: 30 HingeLoss: 0.18188985072063915
iteration: 31 HingeLoss: 0.17807399528444906
iteration: 32 HingeLoss: 0.1743381924331186

```

Output\_hinge\_train.txt

iteration: 33 HingeLoss: 0.17068076274863775  
iteration: 34 HingeLoss: 0.16710006204539862  
iteration: 35 HingeLoss: 0.1635944806310571  
iteration: 36 HingeLoss: 0.16016244258290083  
iteration: 37 HingeLoss: 0.1568024050393982  
iteration: 38 HingeLoss: 0.1535128575066102  
iteration: 39 HingeLoss: 0.15029232117915248  
iteration: 40 HingeLoss: 0.14713934827540373  
iteration: 41 HingeLoss: 0.1440525213866594  
iteration: 42 HingeLoss: 0.14103045283994087  
iteration: 43 HingeLoss: 0.13807178407417142  
iteration: 44 HingeLoss: 0.13517518502943926  
iteration: 45 HingeLoss: 0.13233935354907364  
iteration: 46 HingeLoss: 0.1295630147942648  
iteration: 47 HingeLoss: 0.1268449206709638  
iteration: 48 HingeLoss: 0.12418384926880632  
iteration: 49 HingeLoss: 0.1215786043118066  
iteration: 50 HingeLoss: 0.11902801462057562  
iteration: 51 HingeLoss: 0.11653093358582112  
iteration: 52 HingeLoss: 0.11408623865289326  
iteration: 53 HingeLoss: 0.11169283081714358  
iteration: 54 HingeLoss: 0.10934963412987134  
iteration: 55 HingeLoss: 0.10705559521463393  
iteration: 56 HingeLoss: 0.1048096827937054  
iteration: 57 HingeLoss: 0.10261088722446843  
iteration: 58 HingeLoss: 0.10045822004553308  
iteration: 59 HingeLoss: 0.09835071353237704  
iteration: 60 HingeLoss: 0.09628742026230841  
iteration: 61 HingeLoss: 0.09426741268855456  
iteration: 62 HingeLoss: 0.09228978272328694  
iteration: 63 HingeLoss: 0.0903536413293928  
iteration: 64 HingeLoss: 0.08845811812081171  
iteration: 65 HingeLoss: 0.08660236097125604  
iteration: 66 HingeLoss: 0.08478553563114068  
iteration: 67 HingeLoss: 0.08300682535254862  
iteration: 68 HingeLoss: 0.08126543052206478  
iteration: 69 HingeLoss: 0.0795605683013122  
iteration: 70 HingeLoss: 0.07789147227502972  
iteration: 71 HingeLoss: 0.07625739210653248  
iteration: 72 HingeLoss: 0.07465759320040052  
iteration: 73 HingeLoss: 0.07309135637224369  
iteration: 74 HingeLoss: 0.07155797752539478  
iteration: 75 HingeLoss: 0.07005676733438519  
iteration: 76 HingeLoss: 0.06858705093506065  
iteration: 77 HingeLoss: 0.06714816762119855  
iteration: 78 HingeLoss: 0.06573947054748948  
iteration: 79 HingeLoss: 0.06436032643874987  
iteration: 80 HingeLoss: 0.06301011530523554  
iteration: 81 HingeLoss: 0.061688230163926966  
iteration: 82 HingeLoss: 0.06039407676566236  
iteration: 83 HingeLoss: 0.05912707332799457  
iteration: 84 HingeLoss: 0.05788665027365296

# Output\_hinge\_train.txt

```

iteration: 85 HingeLoss: 0.056672249974491606
iteration: 86 HingeLoss: 0.055483326500809615
iteration: 87 HingeLoss: 0.05431934537592984
iteration: 88 HingeLoss: 0.053179783335927024
iteration: 89 HingeLoss: 0.05206412809439584
iteration: 90 HingeLoss: 0.050971878112154506
iteration: 91 HingeLoss: 0.04990254237177935
iteration: 92 HingeLoss: 0.04885564015686952
iteration: 93 HingeLoss: 0.04783070083594244
iteration: 94 HingeLoss: 0.04682726365086317
iteration: 95 HingeLoss: 0.045844877509711786
iteration: 96 HingeLoss: 0.04488310078399674
iteration: 97 HingeLoss: 0.043941501110121975
iteration: 98 HingeLoss: 0.04301965519501956
iteration: 99 HingeLoss: 0.04211714862585939
[-1.37217881e-03 -2.23605239e-04 -8.05497092e-04 ... 9.49550960e-04
 4.60272709e-04 6.94953685e-05]

```

## CROSS VALIDATION 19

```

iteration: 0 HingeLoss: 30.47091981078377
iteration: 1 HingeLoss: 14.008255969497089
iteration: 2 HingeLoss: 0.2672032334927989
iteration: 3 HingeLoss: 0.26159759410692107
iteration: 4 HingeLoss: 0.2561095550678421
iteration: 5 HingeLoss: 0.25073664924547806
iteration: 6 HingeLoss: 0.2454764612675083
iteration: 7 HingeLoss: 0.24032662643355163
iteration: 8 HingeLoss: 0.23528482965212394
iteration: 9 HingeLoss: 0.23034880439989575
iteration: 10 HingeLoss: 0.22551633170278398
iteration: 11 HingeLoss: 0.2207852391384199
iteration: 12 HingeLoss: 0.21615339985954332
iteration: 13 HingeLoss: 0.21161873163788533
iteration: 14 HingeLoss: 0.20717919592810954
iteration: 15 HingeLoss: 0.20283279695139067
iteration: 16 HingeLoss: 0.19857758079821816
iteration: 17 HingeLoss: 0.1944116345500234
iteration: 18 HingeLoss: 0.19033308541923274
iteration: 19 HingeLoss: 0.18634009990736225
iteration: 20 HingeLoss: 0.18243088298077414
iteration: 21 HingeLoss: 0.17860367726372564
iteration: 22 HingeLoss: 0.174856762248346
iteration: 23 HingeLoss: 0.17118845352118828
iteration: 24 HingeLoss: 0.1675971020060063
iteration: 25 HingeLoss: 0.16408109322241804
iteration: 26 HingeLoss: 0.16063884656012134
iteration: 27 HingeLoss: 0.15726881456833536
iteration: 28 HingeLoss: 0.15396948226014928
iteration: 29 HingeLoss: 0.15073936643146502
iteration: 30 HingeLoss: 0.14757701499422743
iteration: 31 HingeLoss: 0.14448100632364286
iteration: 32 HingeLoss: 0.1414499486190927
iteration: 33 HingeLoss: 0.13848247927845336

```

Output\_hinge\_train.txt

iteration: 34 HingeLoss: 0.13557726428554334  
iteration: 35 HingeLoss: 0.13273299761042062  
iteration: 36 HingeLoss: 0.12994840062226082  
iteration: 37 HingeLoss: 0.12722222151455329  
iteration: 38 HingeLoss: 0.12455323474235509  
iteration: 39 HingeLoss: 0.12194024047135185  
iteration: 40 HingeLoss: 0.11938206403847557  
iteration: 41 HingeLoss: 0.11687755542383897  
iteration: 42 HingeLoss: 0.11442558873374782  
iteration: 43 HingeLoss: 0.11202506169455899  
iteration: 44 HingeLoss: 0.1096748951571569  
iteration: 45 HingeLoss: 0.10737403261182567  
iteration: 46 HingeLoss: 0.10512143971329847  
iteration: 47 HingeLoss: 0.10291610381577115  
iteration: 48 HingeLoss: 0.10075703351767042  
iteration: 49 HingeLoss: 0.09864325821597267  
iteration: 50 HingeLoss: 0.09657382766987231  
iteration: 51 HingeLoss: 0.0945478115736045  
iteration: 52 HingeLoss: 0.09256429913822885  
iteration: 53 HingeLoss: 0.09062239868218736  
iteration: 54 HingeLoss: 0.08872123723045186  
iteration: 55 HingeLoss: 0.08685996012208094  
iteration: 56 HingeLoss: 0.08503773062601001  
iteration: 57 HingeLoss: 0.08325372956490128  
iteration: 58 HingeLoss: 0.08150715494688562  
iteration: 59 HingeLoss: 0.07979722160502947  
iteration: 60 HingeLoss: 0.07812316084436571  
iteration: 61 HingeLoss: 0.07648422009632927  
iteration: 62 HingeLoss: 0.07487966258044246  
iteration: 63 HingeLoss: 0.07330876697309757  
iteration: 64 HingeLoss: 0.07177082708328857  
iteration: 65 HingeLoss: 0.07026515153514462  
iteration: 66 HingeLoss: 0.0687910634571248  
iteration: 67 HingeLoss: 0.0673479001777326  
iteration: 68 HingeLoss: 0.06593501292761386  
iteration: 69 HingeLoss: 0.06455176654790507  
iteration: 70 HingeLoss: 0.06319753920469938  
iteration: 71 HingeLoss: 0.06187172210950331  
iteration: 72 HingeLoss: 0.06057371924555793  
iteration: 73 HingeLoss: 0.05930294709990141  
iteration: 74 HingeLoss: 0.05805883440105266  
iteration: 75 HingeLoss: 0.056840821862198146  
iteration: 76 HingeLoss: 0.05564836192976627  
iteration: 77 HingeLoss: 0.054480918537276456  
iteration: 78 HingeLoss: 0.05333796686435224  
iteration: 79 HingeLoss: 0.052218993100789896  
iteration: 80 HingeLoss: 0.0511234942155769  
iteration: 81 HingeLoss: 0.05005097773075578  
iteration: 82 HingeLoss: 0.049000961500032365  
iteration: 83 HingeLoss: 0.047972973492028476  
iteration: 84 HingeLoss: 0.04696655157808168  
iteration: 85 HingeLoss: 0.045981243324497066

# Output\_hinge\_train.txt

```

iteration: 86 HingeLoss: 0.04501660578915684
iteration: 87 HingeLoss: 0.04407220532239739
iteration: 88 HingeLoss: 0.04314761737206338
iteration: 89 HingeLoss: 0.04224242629265176
iteration: 90 HingeLoss: 0.04135622515845962
iteration: 91 HingeLoss: 0.04048861558065208
iteration: 92 HingeLoss: 0.03963920752816802
iteration: 93 HingeLoss: 0.03880761915238261
iteration: 94 HingeLoss: 0.03799347661544879
iteration: 95 HingeLoss: 0.03719641392223955
iteration: 96 HingeLoss: 0.03641607275581596
iteration: 97 HingeLoss: 0.03565210231634711
iteration: 98 HingeLoss: 0.03490415916340902
iteration: 99 HingeLoss: 0.034171907061592184
[-7.38725931e-04 -2.15720788e-04 -5.60145378e-04 ... 3.83434016e-04
 1.30854810e-04 6.93243957e-05]

```

Accuracy (Hinge Loss): 0.9

eta = 0.0001 lambda = 0.3

## CROSS VALIDATION 0

```

iteration: 0 HingeLoss: 24.73204288259534
iteration: 1 HingeLoss: 0.08651751796582977
iteration: 2 HingeLoss: 0.08596899624383798
iteration: 3 HingeLoss: 0.085423952153736
iteration: 4 HingeLoss: 0.08488236364731105
iteration: 5 HingeLoss: 0.08434420881613637
iteration: 6 HingeLoss: 0.08380946589068484
iteration: 7 HingeLoss: 0.08327811323944809
iteration: 8 HingeLoss: 0.08275012936806188
iteration: 9 HingeLoss: 0.08222549291843635
iteration: 10 HingeLoss: 0.08170418266789205
iteration: 11 HingeLoss: 0.08118617752830148
iteration: 12 HingeLoss: 0.0806714565452361
iteration: 13 HingeLoss: 0.08015999889711856
iteration: 14 HingeLoss: 0.07965178389438043
iteration: 15 HingeLoss: 0.07914679097862534
iteration: 16 HingeLoss: 0.07864499972179727
iteration: 17 HingeLoss: 0.07814638982535439
iteration: 18 HingeLoss: 0.07765094111944758
iteration: 19 HingeLoss: 0.07715863356210481
iteration: 20 HingeLoss: 0.07666944723842029
iteration: 21 HingeLoss: 0.07618336235974886
iteration: 22 HingeLoss: 0.0757003592629056
iteration: 23 HingeLoss: 0.07522041840937026
iteration: 24 HingeLoss: 0.07474352038449694
iteration: 25 HingeLoss: 0.07426964589672883
iteration: 26 HingeLoss: 0.07379877577681761
iteration: 27 HingeLoss: 0.07333089097704833
iteration: 28 HingeLoss: 0.07286597257046841
iteration: 29 HingeLoss: 0.07240400175012267
iteration: 30 HingeLoss: 0.07194495982829184
iteration: 31 HingeLoss: 0.07148882823573706
iteration: 32 HingeLoss: 0.07103558852094863

```



Output\_hinge\_train.txt

iteration: 33 HingeLoss: 0.07058522234939946  
iteration: 34 HingeLoss: 0.07013771150280362  
iteration: 35 HingeLoss: 0.06969303787837913  
iteration: 36 HingeLoss: 0.06925118348811586  
iteration: 37 HingeLoss: 0.0688121304580478  
iteration: 38 HingeLoss: 0.06837586102752997  
iteration: 39 HingeLoss: 0.06794235754852009  
iteration: 40 HingeLoss: 0.06751160248486456  
iteration: 41 HingeLoss: 0.06708357841158906  
iteration: 42 HingeLoss: 0.06665826801419389  
iteration: 43 HingeLoss: 0.06623565408795326  
iteration: 44 HingeLoss: 0.0658157195372196  
iteration: 45 HingeLoss: 0.0653984473747318  
iteration: 46 HingeLoss: 0.06498382072092813  
iteration: 47 HingeLoss: 0.06457182280326336  
iteration: 48 HingeLoss: 0.06416243695553046  
iteration: 49 HingeLoss: 0.06375564661718609  
iteration: 50 HingeLoss: 0.06335143533268106  
iteration: 51 HingeLoss: 0.06294978675079442  
iteration: 52 HingeLoss: 0.06255068462397197  
iteration: 53 HingeLoss: 0.0621541128076694  
iteration: 54 HingeLoss: 0.06176005525969867  
iteration: 55 HingeLoss: 0.06136849603957942  
iteration: 56 HingeLoss: 0.060979419307894085  
iteration: 57 HingeLoss: 0.06059280932564713  
iteration: 58 HingeLoss: 0.06020865045362829  
iteration: 59 HingeLoss: 0.05982692715178016  
iteration: 60 HingeLoss: 0.059447623978569286  
iteration: 61 HingeLoss: 0.05907072559036173  
iteration: 62 HingeLoss: 0.05869621674080225  
iteration: 63 HingeLoss: 0.05832408228019763  
iteration: 64 HingeLoss: 0.057954307154903864  
iteration: 65 HingeLoss: 0.057586876406717113  
iteration: 66 HingeLoss: 0.05722177517226868  
iteration: 67 HingeLoss: 0.05685898868242377  
iteration: 68 HingeLoss: 0.05649850226168403  
iteration: 69 HingeLoss: 0.056140301327593754  
iteration: 70 HingeLoss: 0.055784371390150266  
iteration: 71 HingeLoss: 0.05543069805121747  
iteration: 72 HingeLoss: 0.05507926700394374  
iteration: 73 HingeLoss: 0.05473006403218284  
iteration: 74 HingeLoss: 0.05438307500991908  
iteration: 75 HingeLoss: 0.054038285900695836  
iteration: 76 HingeLoss: 0.053695682757047634  
iteration: 77 HingeLoss: 0.053355251719936186  
iteration: 78 HingeLoss: 0.05301697901818947  
iteration: 79 HingeLoss: 0.05268085096794487  
iteration: 80 HingeLoss: 0.052346853972095556  
iteration: 81 HingeLoss: 0.052014974519740444  
iteration: 82 HingeLoss: 0.05168519918563769  
iteration: 83 HingeLoss: 0.05135751462966154  
iteration: 84 HingeLoss: 0.051031907596262756

Output\_hinge\_train.txt

iteration: 85 HingeLoss: 0.05070836491393249  
iteration: 86 HingeLoss: 0.05038687349466918  
iteration: 87 HingeLoss: 0.050067420333449346  
iteration: 88 HingeLoss: 0.0497499925077016  
iteration: 89 HingeLoss: 0.049434577176783574  
iteration: 90 HingeLoss: 0.049121161581462715  
iteration: 91 HingeLoss: 0.0488097330434002  
iteration: 92 HingeLoss: 0.04850027896463783  
iteration: 93 HingeLoss: 0.04819278682708865  
iteration: 94 HingeLoss: 0.04788724419203046  
iteration: 95 HingeLoss: 0.047583638699602616  
iteration: 96 HingeLoss: 0.04728195806830613  
iteration: 97 HingeLoss: 0.046982190094506736  
iteration: 98 HingeLoss: 0.046684322651941425  
iteration: 99 HingeLoss: 0.046388343691227664  
[-1.50183517e-03 1.13756814e-04 1.68698234e-04 ... 4.62444242e-04  
6.11638494e-04 -7.31229587e-05]

CROSS VALIDATION 1

iteration: 0 HingeLoss: 14.742073847765752  
iteration: 1 HingeLoss: 0.34785682613497404  
iteration: 2 HingeLoss: 0.09252136348153098  
iteration: 3 HingeLoss: 0.09193477733330196  
iteration: 4 HingeLoss: 0.09135191014571452  
iteration: 5 HingeLoss: 0.09077273834052992  
iteration: 6 HingeLoss: 0.09019723848899562  
iteration: 7 HingeLoss: 0.0896253873108975  
iteration: 8 HingeLoss: 0.08905716167361831  
iteration: 9 HingeLoss: 0.08849253859120162  
iteration: 10 HingeLoss: 0.08793149522342224  
iteration: 11 HingeLoss: 0.0873740088748621  
iteration: 12 HingeLoss: 0.08682005699399228  
iteration: 13 HingeLoss: 0.08626961717226078  
iteration: 14 HingeLoss: 0.0857226671431859  
iteration: 15 HingeLoss: 0.08517918478145572  
iteration: 16 HingeLoss: 0.08463914810203285  
iteration: 17 HingeLoss: 0.08410253525926528  
iteration: 18 HingeLoss: 0.08356932454600255  
iteration: 19 HingeLoss: 0.08303949439271768  
iteration: 20 HingeLoss: 0.08251302336663484  
iteration: 21 HingeLoss: 0.08198989017086186  
iteration: 22 HingeLoss: 0.08147007364352926  
iteration: 23 HingeLoss: 0.08095355275693392  
iteration: 24 HingeLoss: 0.0804403066166884  
iteration: 25 HingeLoss: 0.07993031446087602  
iteration: 26 HingeLoss: 0.07942355565921073  
iteration: 27 HingeLoss: 0.07892000971220267  
iteration: 28 HingeLoss: 0.0784196562503287  
iteration: 29 HingeLoss: 0.07792247503320901  
iteration: 30 HingeLoss: 0.07742844594878762  
iteration: 31 HingeLoss: 0.07693754901251919  
iteration: 32 HingeLoss: 0.07644976436656073  
iteration: 33 HingeLoss: 0.07596507227896787

# Output\_hinge\_train.txt

```

iteration: 34 HingeLoss: 0.07548345314289716
iteration: 35 HingeLoss: 0.07500488747581256
iteration: 36 HingeLoss: 0.07452935591869743
iteration: 37 HingeLoss: 0.07405683923527148
iteration: 38 HingeLoss: 0.07358731831121262
iteration: 39 HingeLoss: 0.07312077415338368
iteration: 40 HingeLoss: 0.07265718788906407
iteration: 41 HingeLoss: 0.07219654076518654
iteration: 42 HingeLoss: 0.07173881414757821
iteration: 43 HingeLoss: 0.07128398952020719
iteration: 44 HingeLoss: 0.0708320484844333
iteration: 45 HingeLoss: 0.07038297275826383
iteration: 46 HingeLoss: 0.0699367441756142
iteration: 47 HingeLoss: 0.06949334468557272
iteration: 48 HingeLoss: 0.06905275635167081
iteration: 49 HingeLoss: 0.06861496135115715
iteration: 50 HingeLoss: 0.06817994197427675
iteration: 51 HingeLoss: 0.06774768062355475
iteration: 52 HingeLoss: 0.06731815981308427
iteration: 53 HingeLoss: 0.06689136216781928
iteration: 54 HingeLoss: 0.06646727042287169
iteration: 55 HingeLoss: 0.06604586742281286
iteration: 56 HingeLoss: 0.06562713612097981
iteration: 57 HingeLoss: 0.06521105957878541
iteration: 58 HingeLoss: 0.06479762096503333
iteration: 59 HingeLoss: 0.0643868035552373
iteration: 60 HingeLoss: 0.06397859073094415
iteration: 61 HingeLoss: 0.06357296597906209
iteration: 62 HingeLoss: 0.06316991289119232
iteration: 63 HingeLoss: 0.06276941516296544
iteration: 64 HingeLoss: 0.062371456593381884
iteration: 65 HingeLoss: 0.06197602108415651
iteration: 66 HingeLoss: 0.061583092639067444
iteration: 67 HingeLoss: 0.061192655363309034
iteration: 68 HingeLoss: 0.060804693462848794
iteration: 69 HingeLoss: 0.06041919124378847
iteration: 70 HingeLoss: 0.06003613311172923
iteration: 71 HingeLoss: 0.05965550357114098
iteration: 72 HingeLoss: 0.05927728722473529
iteration: 73 HingeLoss: 0.058901468772842656
iteration: 74 HingeLoss: 0.0585280330127937
iteration: 75 HingeLoss: 0.05815696483830393
iteration: 76 HingeLoss: 0.05778824923886292
iteration: 77 HingeLoss: 0.057421871299126986
iteration: 78 HingeLoss: 0.05705781619831577
iteration: 79 HingeLoss: 0.05669606920961291
iteration: 80 HingeLoss: 0.05633661569956997
iteration: 81 HingeLoss: 0.055979441127514906
iteration: 82 HingeLoss: 0.055624531044963475
iteration: 83 HingeLoss: 0.05527187109503495
iteration: 84 HingeLoss: 0.05492144701187154
iteration: 85 HingeLoss: 0.05457324462006084

```

# Output\_hinge\_train.txt

```

iteration: 86 HingeLoss: 0.054227249834062734
iteration: 87 HingeLoss: 0.0538834486576397
iteration: 88 HingeLoss: 0.053541827183290244
iteration: 89 HingeLoss: 0.053202371591686705
iteration: 90 HingeLoss: 0.05286506815111596
iteration: 91 HingeLoss: 0.052529903216924106
iteration: 92 HingeLoss: 0.05219686323096444
iteration: 93 HingeLoss: 0.051865934721048966
iteration: 94 HingeLoss: 0.0515371043004036
iteration: 95 HingeLoss: 0.0512103586671263
iteration: 96 HingeLoss: 0.05088568460364937
iteration: 97 HingeLoss: 0.05056306897620446
iteration: 98 HingeLoss: 0.050242498734291506
iteration: 99 HingeLoss: 0.0499239609101507
[-0.00173941 -0.00023584 -0.00039395 ... 0.00091122 0.00082632
0.0002188 ]

```

## CROSS VALIDATION 2

```

iteration: 0 HingeLoss: 10.446623684707047
iteration: 1 HingeLoss: 2.520466339566469
iteration: 2 HingeLoss: 0.09279534520580714
iteration: 3 HingeLoss: 0.09220702201136217
iteration: 4 HingeLoss: 0.09162242879044505
iteration: 5 HingeLoss: 0.09104154189499518
iteration: 6 HingeLoss: 0.09046433782688094
iteration: 7 HingeLoss: 0.089890793236949
iteration: 8 HingeLoss: 0.08932088492407983
iteration: 9 HingeLoss: 0.08875458983424923
iteration: 10 HingeLoss: 0.08819188505959566
iteration: 11 HingeLoss: 0.08763274783749352
iteration: 12 HingeLoss: 0.08707715554963255
iteration: 13 HingeLoss: 0.08652508572110268
iteration: 14 HingeLoss: 0.085976516019485
iteration: 15 HingeLoss: 0.08543142425394816
iteration: 16 HingeLoss: 0.08488978837435102
iteration: 17 HingeLoss: 0.08435158647035049
iteration: 18 HingeLoss: 0.08381679677051508
iteration: 19 HingeLoss: 0.08328539764144445
iteration: 20 HingeLoss: 0.08275736758689424
iteration: 21 HingeLoss: 0.0822326852469062
iteration: 22 HingeLoss: 0.08171132939694466
iteration: 23 HingeLoss: 0.08119327894703757
iteration: 24 HingeLoss: 0.08067851294092339
iteration: 25 HingeLoss: 0.08016701055520352
iteration: 26 HingeLoss: 0.07965875109849978
iteration: 27 HingeLoss: 0.07915371401061753
iteration: 28 HingeLoss: 0.07865187886171403
iteration: 29 HingeLoss: 0.07815322535147175
iteration: 30 HingeLoss: 0.07765773330827734
iteration: 31 HingeLoss: 0.07716538268840575
iteration: 32 HingeLoss: 0.07667615357520914
iteration: 33 HingeLoss: 0.07619002617831146
iteration: 34 HingeLoss: 0.07570698083280787

```

Output\_hinge\_train.txt

iteration: 35 HingeLoss: 0.07522699799846896  
iteration: 36 HingeLoss: 0.0747500582589507  
iteration: 37 HingeLoss: 0.07427614232100879  
iteration: 38 HingeLoss: 0.07380523101371823  
iteration: 39 HingeLoss: 0.07333730528769788  
iteration: 40 HingeLoss: 0.07287234621433972  
iteration: 41 HingeLoss: 0.07241033498504333  
iteration: 42 HingeLoss: 0.0719512529104549  
iteration: 43 HingeLoss: 0.07149508141971135  
iteration: 44 HingeLoss: 0.07104180205968895  
iteration: 45 HingeLoss: 0.07059139649425693  
iteration: 46 HingeLoss: 0.07014384650353567  
iteration: 47 HingeLoss: 0.06969913398315991  
iteration: 48 HingeLoss: 0.06925724094354599  
iteration: 49 HingeLoss: 0.0688181495091644  
iteration: 50 HingeLoss: 0.06838184191781672  
iteration: 51 HingeLoss: 0.06794830051991689  
iteration: 52 HingeLoss: 0.06751750777777751  
iteration: 53 HingeLoss: 0.06708944626490002  
iteration: 54 HingeLoss: 0.06666409866527026  
iteration: 55 HingeLoss: 0.06624144777265747  
iteration: 56 HingeLoss: 0.0658214764899187  
iteration: 57 HingeLoss: 0.065404167828307  
iteration: 58 HingeLoss: 0.06498950490678414  
iteration: 59 HingeLoss: 0.06457747095133783  
iteration: 60 HingeLoss: 0.06416804929430311  
iteration: 61 HingeLoss: 0.0637612233736883  
iteration: 62 HingeLoss: 0.06335697673250461  
iteration: 63 HingeLoss: 0.06295529301810092  
iteration: 64 HingeLoss: 0.06255615598150191  
iteration: 65 HingeLoss: 0.06215954947675097  
iteration: 66 HingeLoss: 0.06176545746025687  
iteration: 67 HingeLoss: 0.061373863990144994  
iteration: 68 HingeLoss: 0.06098475322561222  
iteration: 69 HingeLoss: 0.06059810942628635  
iteration: 70 HingeLoss: 0.0602139169515892  
iteration: 71 HingeLoss: 0.059832160260103934  
iteration: 72 HingeLoss: 0.05945282390894651  
iteration: 73 HingeLoss: 0.05907589255314077  
iteration: 74 HingeLoss: 0.05870135094499795  
iteration: 75 HingeLoss: 0.058329183933499694  
iteration: 76 HingeLoss: 0.05795937646368521  
iteration: 77 HingeLoss: 0.05759191357604221  
iteration: 78 HingeLoss: 0.057226780405901956  
iteration: 79 HingeLoss: 0.056863962182837735  
iteration: 80 HingeLoss: 0.05650344423006751  
iteration: 81 HingeLoss: 0.056145211963860124  
iteration: 82 HingeLoss: 0.05578925089294533  
iteration: 83 HingeLoss: 0.055435546617927704  
iteration: 84 HingeLoss: 0.05508408483070414  
iteration: 85 HingeLoss: 0.05473485131388494  
iteration: 86 HingeLoss: 0.054387831940218775

# Output\_hinge\_train.txt

```

iteration: 87 HingeLoss: 0.05404301267202122
iteration: 88 HingeLoss: 0.0537003795606069
iteration: 89 HingeLoss: 0.05335991874572516
iteration: 90 HingeLoss: 0.05302161645499943
iteration: 91 HingeLoss: 0.052685459003370204
iteration: 92 HingeLoss: 0.05235143279254124
iteration: 93 HingeLoss: 0.05201952431042967
iteration: 94 HingeLoss: 0.05168972013061935
iteration: 95 HingeLoss: 0.0513620069118176
iteration: 96 HingeLoss: 0.051036371397315816
iteration: 97 HingeLoss: 0.05071280041445287
iteration: 98 HingeLoss: 0.05039128087408249
iteration: 99 HingeLoss: 0.05007179977004373
[-1.46639605e-03 -6.12804493e-04 -6.35017043e-04 ... 1.55085220e-03
 6.90455010e-04 7.29525279e-05]

```

## CROSS VALIDATION 3

```

iteration: 0 HingeLoss: 20.846377165764732
iteration: 1 HingeLoss: 1.3975456093916065
iteration: 2 HingeLoss: 0.7573298943946095
iteration: 3 HingeLoss: 0.0970737250747348
iteration: 4 HingeLoss: 0.09645827691937767
iteration: 5 HingeLoss: 0.0958467307100069
iteration: 6 HingeLoss: 0.09523906170825525
iteration: 7 HingeLoss: 0.09463524533259687
iteration: 8 HingeLoss: 0.09403525715735296
iteration: 9 HingeLoss: 0.09343907291170396
iteration: 10 HingeLoss: 0.09284666847870714
iteration: 11 HingeLoss: 0.09225801989432166
iteration: 12 HingeLoss: 0.09167310334643859
iteration: 13 HingeLoss: 0.09109189517391832
iteration: 14 HingeLoss: 0.0905143718656327
iteration: 15 HingeLoss: 0.08994051005951448
iteration: 16 HingeLoss: 0.08937028654161207
iteration: 17 HingeLoss: 0.08880367824515058
iteration: 18 HingeLoss: 0.08824066224959849
iteration: 19 HingeLoss: 0.0876812157797407
iteration: 20 HingeLoss: 0.0871253162047572
iteration: 21 HingeLoss: 0.08657294103730749
iteration: 22 HingeLoss: 0.08602406793262103
iteration: 23 HingeLoss: 0.08547867468759325
iteration: 24 HingeLoss: 0.08493673923988743
iteration: 25 HingeLoss: 0.08439823966704225
iteration: 26 HingeLoss: 0.083863154185585
iteration: 27 HingeLoss: 0.08333146115015022
iteration: 28 HingeLoss: 0.08280313905260434
iteration: 29 HingeLoss: 0.08227816652117562
iteration: 30 HingeLoss: 0.08175652231958927
iteration: 31 HingeLoss: 0.08123818534620882
iteration: 32 HingeLoss: 0.08072313463318229
iteration: 33 HingeLoss: 0.08021134934559407
iteration: 34 HingeLoss: 0.079702808780622
iteration: 35 HingeLoss: 0.07919749236670003

```

Output\_hinge\_train.txt

iteration: 36 HingeLoss: 0.07869537966268599  
iteration: 37 HingeLoss: 0.07819645035703461  
iteration: 38 HingeLoss: 0.07770068426697617  
iteration: 39 HingeLoss: 0.0772080613376997  
iteration: 40 HingeLoss: 0.07671856164154192  
iteration: 41 HingeLoss: 0.07623216537718118  
iteration: 42 HingeLoss: 0.07574885286883618  
iteration: 43 HingeLoss: 0.07526860456547033  
iteration: 44 HingeLoss: 0.07479140104000082  
iteration: 45 HingeLoss: 0.0743172229885126  
iteration: 46 HingeLoss: 0.07384605122947759  
iteration: 47 HingeLoss: 0.07337786670297881  
iteration: 48 HingeLoss: 0.07291265046993925  
iteration: 49 HingeLoss: 0.07245038371135577  
iteration: 50 HingeLoss: 0.07199104772753794  
iteration: 51 HingeLoss: 0.07153462393735137  
iteration: 52 HingeLoss: 0.07108109387746638  
iteration: 53 HingeLoss: 0.07063043920161073  
iteration: 54 HingeLoss: 0.07018264167982792  
iteration: 55 HingeLoss: 0.06973768319773932  
iteration: 56 HingeLoss: 0.06929554575581173  
iteration: 57 HingeLoss: 0.06885621146862901  
iteration: 58 HingeLoss: 0.06841966256416884  
iteration: 59 HingeLoss: 0.0679858813830835  
iteration: 60 HingeLoss: 0.06755485037798575  
iteration: 61 HingeLoss: 0.06712655211273894  
iteration: 62 HingeLoss: 0.06670096926175158  
iteration: 63 HingeLoss: 0.06627808460927664  
iteration: 64 HingeLoss: 0.06585788104871511  
iteration: 65 HingeLoss: 0.06544034158192366  
iteration: 66 HingeLoss: 0.06502544931852772  
iteration: 67 HingeLoss: 0.06461318747523756  
iteration: 68 HingeLoss: 0.06420353937516966  
iteration: 69 HingeLoss: 0.06379648844717219  
iteration: 70 HingeLoss: 0.0633920182251544  
iteration: 71 HingeLoss: 0.06299011234742077  
iteration: 72 HingeLoss: 0.062590754556009  
iteration: 73 HingeLoss: 0.06219392869603249  
iteration: 74 HingeLoss: 0.061799618715026684  
iteration: 75 HingeLoss: 0.061407808662299695  
iteration: 76 HingeLoss: 0.06101848268828732  
iteration: 77 HingeLoss: 0.060631625043911494  
iteration: 78 HingeLoss: 0.060247220079943646  
iteration: 79 HingeLoss: 0.059865252246371306  
iteration: 80 HingeLoss: 0.059485706091769196  
iteration: 81 HingeLoss: 0.05910856626267426  
iteration: 82 HingeLoss: 0.058733817502964476  
iteration: 83 HingeLoss: 0.05836144465324176  
iteration: 84 HingeLoss: 0.057991432650218694  
iteration: 85 HingeLoss: 0.05762376652610925  
iteration: 86 HingeLoss: 0.05725843140802332  
iteration: 87 HingeLoss: 0.05689541251736489

# Output\_hinge\_train.txt

```

iteration: 88 HingeLoss: 0.05653469516923456
iteration: 89 HingeLoss: 0.056176264771835134
iteration: 90 HingeLoss: 0.05582010682588155
iteration: 91 HingeLoss: 0.055466206924014445
iteration: 92 HingeLoss: 0.05511455075021707
iteration: 93 HingeLoss: 0.05476512407923639
iteration: 94 HingeLoss: 0.05441791277600766
iteration: 95 HingeLoss: 0.05407290279508239
iteration: 96 HingeLoss: 0.05373008018006049
iteration: 97 HingeLoss: 0.053389431063025496
iteration: 98 HingeLoss: 0.05305094166398361
iteration: 99 HingeLoss: 0.05271459829030637
[-0.00214857 -0.00021613 -0.00038711 ... 0.00162776 0.00098527
0.00014641]

```

## CROSS VALIDATION 4

```

iteration: 0 HingeLoss: 20.846377165764732
iteration: 1 HingeLoss: 1.3975456093916065
iteration: 2 HingeLoss: 0.7573298943946095
iteration: 3 HingeLoss: 0.0970737250747348
iteration: 4 HingeLoss: 0.09645827691937767
iteration: 5 HingeLoss: 0.0958467307100069
iteration: 6 HingeLoss: 0.09523906170825525
iteration: 7 HingeLoss: 0.09463524533259687
iteration: 8 HingeLoss: 0.09403525715735296
iteration: 9 HingeLoss: 0.09343907291170396
iteration: 10 HingeLoss: 0.09284666847870714
iteration: 11 HingeLoss: 0.09225801989432166
iteration: 12 HingeLoss: 0.09167310334643859
iteration: 13 HingeLoss: 0.09109189517391832
iteration: 14 HingeLoss: 0.0905143718656327
iteration: 15 HingeLoss: 0.08994051005951448
iteration: 16 HingeLoss: 0.08937028654161207
iteration: 17 HingeLoss: 0.08880367824515058
iteration: 18 HingeLoss: 0.08824066224959849
iteration: 19 HingeLoss: 0.0876812157797407
iteration: 20 HingeLoss: 0.0871253162047572
iteration: 21 HingeLoss: 0.08657294103730749
iteration: 22 HingeLoss: 0.08602406793262103
iteration: 23 HingeLoss: 0.08547867468759325
iteration: 24 HingeLoss: 0.08493673923988743
iteration: 25 HingeLoss: 0.08439823966704225
iteration: 26 HingeLoss: 0.083863154185585
iteration: 27 HingeLoss: 0.08333146115015022
iteration: 28 HingeLoss: 0.08280313905260434
iteration: 29 HingeLoss: 0.08227816652117562
iteration: 30 HingeLoss: 0.08175652231958927
iteration: 31 HingeLoss: 0.08123818534620882
iteration: 32 HingeLoss: 0.08072313463318229
iteration: 33 HingeLoss: 0.08021134934559407
iteration: 34 HingeLoss: 0.079702808780622
iteration: 35 HingeLoss: 0.07919749236670003
iteration: 36 HingeLoss: 0.07869537966268599

```



Output\_hinge\_train.txt

iteration: 37 HingeLoss: 0.07819645035703461  
iteration: 38 HingeLoss: 0.07770068426697617  
iteration: 39 HingeLoss: 0.0772080613376997  
iteration: 40 HingeLoss: 0.07671856164154192  
iteration: 41 HingeLoss: 0.07623216537718118  
iteration: 42 HingeLoss: 0.07574885286883618  
iteration: 43 HingeLoss: 0.07526860456547033  
iteration: 44 HingeLoss: 0.07479140104000082  
iteration: 45 HingeLoss: 0.0743172229885126  
iteration: 46 HingeLoss: 0.07384605122947759  
iteration: 47 HingeLoss: 0.07337786670297881  
iteration: 48 HingeLoss: 0.07291265046993925  
iteration: 49 HingeLoss: 0.07245038371135577  
iteration: 50 HingeLoss: 0.07199104772753794  
iteration: 51 HingeLoss: 0.07153462393735137  
iteration: 52 HingeLoss: 0.07108109387746638  
iteration: 53 HingeLoss: 0.07063043920161073  
iteration: 54 HingeLoss: 0.07018264167982792  
iteration: 55 HingeLoss: 0.06973768319773932  
iteration: 56 HingeLoss: 0.06929554575581173  
iteration: 57 HingeLoss: 0.06885621146862901  
iteration: 58 HingeLoss: 0.06841966256416884  
iteration: 59 HingeLoss: 0.0679858813830835  
iteration: 60 HingeLoss: 0.06755485037798575  
iteration: 61 HingeLoss: 0.06712655211273894  
iteration: 62 HingeLoss: 0.06670096926175158  
iteration: 63 HingeLoss: 0.06627808460927664  
iteration: 64 HingeLoss: 0.06585788104871511  
iteration: 65 HingeLoss: 0.06544034158192366  
iteration: 66 HingeLoss: 0.06502544931852772  
iteration: 67 HingeLoss: 0.06461318747523756  
iteration: 68 HingeLoss: 0.06420353937516966  
iteration: 69 HingeLoss: 0.06379648844717219  
iteration: 70 HingeLoss: 0.0633920182251544  
iteration: 71 HingeLoss: 0.06299011234742077  
iteration: 72 HingeLoss: 0.062590754556009  
iteration: 73 HingeLoss: 0.06219392869603249  
iteration: 74 HingeLoss: 0.061799618715026684  
iteration: 75 HingeLoss: 0.061407808662299695  
iteration: 76 HingeLoss: 0.06101848268828732  
iteration: 77 HingeLoss: 0.060631625043911494  
iteration: 78 HingeLoss: 0.060247220079943646  
iteration: 79 HingeLoss: 0.059865252246371306  
iteration: 80 HingeLoss: 0.059485706091769196  
iteration: 81 HingeLoss: 0.05910856626267426  
iteration: 82 HingeLoss: 0.058733817502964476  
iteration: 83 HingeLoss: 0.05836144465324176  
iteration: 84 HingeLoss: 0.057991432650218694  
iteration: 85 HingeLoss: 0.05762376652610925  
iteration: 86 HingeLoss: 0.05725843140802332  
iteration: 87 HingeLoss: 0.05689541251736489  
iteration: 88 HingeLoss: 0.05653469516923456

Output\_hinge\_train.txt

iteration: 89 HingeLoss: 0.056176264771835134  
iteration: 90 HingeLoss: 0.05582010682588155  
iteration: 91 HingeLoss: 0.055466206924014445  
iteration: 92 HingeLoss: 0.05511455075021707  
iteration: 93 HingeLoss: 0.05476512407923639  
iteration: 94 HingeLoss: 0.05441791277600766  
iteration: 95 HingeLoss: 0.05407290279508239  
iteration: 96 HingeLoss: 0.05373008018006049  
iteration: 97 HingeLoss: 0.053389431063025496  
iteration: 98 HingeLoss: 0.05305094166398361  
iteration: 99 HingeLoss: 0.05271459829030637  
[-0.00214857 -0.00021613 -0.00038711 ... 0.00162776 0.00098527  
0.00014641]

CROSS VALIDATION 5

iteration: 0 HingeLoss: 9.699123198922889  
iteration: 1 HingeLoss: 0.08964495750920279  
iteration: 2 HingeLoss: 0.08907660779671744  
iteration: 3 HingeLoss: 0.08851186142573239  
iteration: 4 HingeLoss: 0.08795069555103512  
iteration: 5 HingeLoss: 0.08739308747225183  
iteration: 6 HingeLoss: 0.08683901463292945  
iteration: 7 HingeLoss: 0.08628845461962288  
iteration: 8 HingeLoss: 0.08574138516098846  
iteration: 9 HingeLoss: 0.08519778412688297  
iteration: 10 HingeLoss: 0.08465762952746866  
iteration: 11 HingeLoss: 0.08412089951232325  
iteration: 12 HingeLoss: 0.08358757236955645  
iteration: 13 HingeLoss: 0.08305762652493147  
iteration: 14 HingeLoss: 0.08253104054099242  
iteration: 15 HingeLoss: 0.08200779311619695  
iteration: 16 HingeLoss: 0.08148786308405478  
iteration: 17 HingeLoss: 0.08097122941227118  
iteration: 18 HingeLoss: 0.0804578712018964  
iteration: 19 HingeLoss: 0.07994776768648022  
iteration: 20 HingeLoss: 0.07944089823123186  
iteration: 21 HingeLoss: 0.0789372423321852  
iteration: 22 HingeLoss: 0.07843677961536952  
iteration: 23 HingeLoss: 0.07793948983598517  
iteration: 24 HingeLoss: 0.07744535287758475  
iteration: 25 HingeLoss: 0.07695434875125919  
iteration: 26 HingeLoss: 0.0764664575948293  
iteration: 27 HingeLoss: 0.0759816596720423  
iteration: 28 HingeLoss: 0.07549993537177332  
iteration: 29 HingeLoss: 0.07502126520723225  
iteration: 30 HingeLoss: 0.07454562981517533  
iteration: 31 HingeLoss: 0.07407300995512195  
iteration: 32 HingeLoss: 0.0736033865085762  
iteration: 33 HingeLoss: 0.07313674047825378  
iteration: 34 HingeLoss: 0.07267305298731304  
iteration: 35 HingeLoss: 0.07221230527859195  
iteration: 36 HingeLoss: 0.07175447871384873  
iteration: 37 HingeLoss: 0.0712995547730084

Output\_hinge\_train.txt

iteration: 38 HingeLoss: 0.07084751505341333  
iteration: 39 HingeLoss: 0.0703983412690789  
iteration: 40 HingeLoss: 0.06995201524995379  
iteration: 41 HingeLoss: 0.06950851894118487  
iteration: 42 HingeLoss: 0.06906783440238692  
iteration: 43 HingeLoss: 0.06862994380691699  
iteration: 44 HingeLoss: 0.06819482944115315  
iteration: 45 HingeLoss: 0.06776247370377791  
iteration: 46 HingeLoss: 0.06733285910506631  
iteration: 47 HingeLoss: 0.06690596826617834  
iteration: 48 HingeLoss: 0.06648178391845604  
iteration: 49 HingeLoss: 0.06606028890272482  
iteration: 50 HingeLoss: 0.06564146616859942  
iteration: 51 HingeLoss: 0.06522529877379409  
iteration: 52 HingeLoss: 0.06481176988343741  
iteration: 53 HingeLoss: 0.06440086276939101  
iteration: 54 HingeLoss: 0.06399256080957323  
iteration: 55 HingeLoss: 0.0635868474872864  
iteration: 56 HingeLoss: 0.06318370639054892  
iteration: 57 HingeLoss: 0.06278312121143119  
iteration: 58 HingeLoss: 0.062385075745396076  
iteration: 59 HingeLoss: 0.06198955389064332  
iteration: 60 HingeLoss: 0.06159653964745822  
iteration: 61 HingeLoss: 0.06120601711756434  
iteration: 62 HingeLoss: 0.060817970503480485  
iteration: 63 HingeLoss: 0.06043238410788158  
iteration: 64 HingeLoss: 0.06004924233296365  
iteration: 65 HingeLoss: 0.059668529679813016  
iteration: 66 HingeLoss: 0.05929023074777926  
iteration: 67 HingeLoss: 0.058914330233852084  
iteration: 68 HingeLoss: 0.05854081293204251  
iteration: 69 HingeLoss: 0.05816966373276747  
iteration: 70 HingeLoss: 0.05780086762223898  
iteration: 71 HingeLoss: 0.05743440968185645  
iteration: 72 HingeLoss: 0.0570702750876034  
iteration: 73 HingeLoss: 0.056708449109447646  
iteration: 74 HingeLoss: 0.05634891711074563  
iteration: 75 HingeLoss: 0.05599166454765008  
iteration: 76 HingeLoss: 0.05563667696852204  
iteration: 77 HingeLoss: 0.055283940013345786  
iteration: 78 HingeLoss: 0.05493343941314845  
iteration: 79 HingeLoss: 0.05458516098942245  
iteration: 80 HingeLoss: 0.05423909065355199  
iteration: 81 HingeLoss: 0.053895214406243286  
iteration: 82 HingeLoss: 0.05355351833695818  
iteration: 83 HingeLoss: 0.05321398862335147  
iteration: 84 HingeLoss: 0.05287661153071161  
iteration: 85 HingeLoss: 0.05254137341140533  
iteration: 86 HingeLoss: 0.05220826070432541  
iteration: 87 HingeLoss: 0.051877259934342126  
iteration: 88 HingeLoss: 0.05154835771175831  
iteration: 89 HingeLoss: 0.051221540731767455

# Output\_hinge\_train.txt

```

iteration: 90 HingeLoss: 0.05089679577391564
iteration: 91 HingeLoss: 0.0505741097015667
iteration: 92 HingeLoss: 0.05025346946137099
iteration: 93 HingeLoss: 0.049934862082737015
iteration: 94 HingeLoss: 0.04961827467730709
iteration: 95 HingeLoss: 0.04930369443843562
iteration: 96 HingeLoss: 0.04899110864067148
iteration: 97 HingeLoss: 0.04868050463924281
iteration: 98 HingeLoss: 0.04837186986954577
iteration: 99 HingeLoss: 0.048065191846636185
[-0.00073898 0.00059591 -0.000702 ... 0.0001487 0.00019698
 0.00043708]

```

## CROSS VALIDATION 6

```

iteration: 0 HingeLoss: 20.84561217805421
iteration: 1 HingeLoss: 1.3974967234952669
iteration: 2 HingeLoss: 0.09209983471965247
iteration: 3 HingeLoss: 0.09151592106698012
iteration: 4 HingeLoss: 0.09093570943130717
iteration: 5 HingeLoss: 0.09035917634181774
iteration: 6 HingeLoss: 0.08978629847650098
iteration: 7 HingeLoss: 0.0892170526612079
iteration: 8 HingeLoss: 0.08865141586871361
iteration: 9 HingeLoss: 0.08808936521778639
iteration: 10 HingeLoss: 0.0875308779722611
iteration: 11 HingeLoss: 0.08697593154012055
iteration: 12 HingeLoss: 0.08642450347258095
iteration: 13 HingeLoss: 0.08587657146318395
iteration: 14 HingeLoss: 0.08533211334689429
iteration: 15 HingeLoss: 0.0847911070992033
iteration: 16 HingeLoss: 0.08425353083523783
iteration: 17 HingeLoss: 0.08371936280887488
iteration: 18 HingeLoss: 0.08318858141186221
iteration: 19 HingeLoss: 0.08266116517294393
iteration: 20 HingeLoss: 0.08213709275699208
iteration: 21 HingeLoss: 0.08161634296414373
iteration: 22 HingeLoss: 0.08109889472894312
iteration: 23 HingeLoss: 0.08058472711948957
iteration: 24 HingeLoss: 0.08007381933659093
iteration: 25 HingeLoss: 0.07956615071292204
iteration: 26 HingeLoss: 0.07906170071218875
iteration: 27 HingeLoss: 0.0785604489282972
iteration: 28 HingeLoss: 0.07806237508452818
iteration: 29 HingeLoss: 0.07756745903271726
iteration: 30 HingeLoss: 0.07707568075243934
iteration: 31 HingeLoss: 0.07658702035019911
iteration: 32 HingeLoss: 0.07610145805862598
iteration: 33 HingeLoss: 0.07561897423567485
iteration: 34 HingeLoss: 0.07513954936383117
iteration: 35 HingeLoss: 0.0746631640493217
iteration: 36 HingeLoss: 0.07418979902132983
iteration: 37 HingeLoss: 0.07371943513121602
iteration: 38 HingeLoss: 0.0732520533517433

```

Output\_hinge\_train.txt

iteration: 39 HingeLoss: 0.07278763477630752  
iteration: 40 HingeLoss: 0.07232616061817262  
iteration: 41 HingeLoss: 0.07186761220971041  
iteration: 42 HingeLoss: 0.0714119710016458  
iteration: 43 HingeLoss: 0.07095921856230611  
iteration: 44 HingeLoss: 0.07050933657687564  
iteration: 45 HingeLoss: 0.07006230684665479  
iteration: 46 HingeLoss: 0.06961811128832386  
iteration: 47 HingeLoss: 0.0691767319332115  
iteration: 48 HingeLoss: 0.06873815092656783  
iteration: 49 HingeLoss: 0.06830235052684228  
iteration: 50 HingeLoss: 0.06786931310496593  
iteration: 51 HingeLoss: 0.06743902114363814  
iteration: 52 HingeLoss: 0.06701145723661811  
iteration: 53 HingeLoss: 0.06658660408802082  
iteration: 54 HingeLoss: 0.06616444451161725  
iteration: 55 HingeLoss: 0.06574496143013925  
iteration: 56 HingeLoss: 0.06532813787458853  
iteration: 57 HingeLoss: 0.06491395698355056  
iteration: 58 HingeLoss: 0.06450240200251216  
iteration: 59 HingeLoss: 0.06409345628318404  
iteration: 60 HingeLoss: 0.06368710328282705  
iteration: 61 HingeLoss: 0.06328332656358326  
iteration: 62 HingeLoss: 0.06288210979181075  
iteration: 63 HingeLoss: 0.06248343673742307  
iteration: 64 HingeLoss: 0.06208729127323272  
iteration: 65 HingeLoss: 0.06169365737429855  
iteration: 66 HingeLoss: 0.06130251911727782  
iteration: 67 HingeLoss: 0.0609138606797817  
iteration: 68 HingeLoss: 0.06052766633973563  
iteration: 69 HingeLoss: 0.060143920474743005  
iteration: 70 HingeLoss: 0.05976260756145337  
iteration: 71 HingeLoss: 0.05938371217493442  
iteration: 72 HingeLoss: 0.05900721898804803  
iteration: 73 HingeLoss: 0.058633112770830276  
iteration: 74 HingeLoss: 0.058261378389875274  
iteration: 75 HingeLoss: 0.05789200080772311  
iteration: 76 HingeLoss: 0.05752496508225143  
iteration: 77 HingeLoss: 0.057160256366071055  
iteration: 78 HingeLoss: 0.056797859905925376  
iteration: 79 HingeLoss: 0.05643776104209356  
iteration: 80 HingeLoss: 0.05607994520779754  
iteration: 81 HingeLoss: 0.05572439792861262  
iteration: 82 HingeLoss: 0.05537110482188217  
iteration: 83 HingeLoss: 0.05502005159613568  
iteration: 84 HingeLoss: 0.054671224050510704  
iteration: 85 HingeLoss: 0.05432460807417835  
iteration: 86 HingeLoss: 0.05398018964577239  
iteration: 87 HingeLoss: 0.05363795483282234  
iteration: 88 HingeLoss: 0.05329788979118958  
iteration: 89 HingeLoss: 0.052959980764507426  
iteration: 90 HingeLoss: 0.052624214083624735

Output\_hinge\_train.txt

```
iteration: 91 HingeLoss: 0.05229057616605282
iteration: 92 HingeLoss: 0.05195905351541608
iteration: 93 HingeLoss: 0.0516296327209061
iteration: 94 HingeLoss: 0.05130230045673901
iteration: 95 HingeLoss: 0.05097704348161656
iteration: 96 HingeLoss: 0.050653848638190446
iteration: 97 HingeLoss: 0.05033270285252999
iteration: 98 HingeLoss: 0.05001359313359342
iteration: 99 HingeLoss: 0.049696506572702165
[-2.42304964e-03 -4.79734555e-04 -5.68865753e-04 ... 1.52051085e-03
 8.88227527e-04 7.29177189e-05]
```

CROSS VALIDATION 7

```
iteration: 0 HingeLoss: 20.84561217805421
iteration: 1 HingeLoss: 1.3974967234952669
iteration: 2 HingeLoss: 0.7571799366440399
iteration: 3 HingeLoss: 0.09707488127281287
iteration: 4 HingeLoss: 0.09645942578715112
iteration: 5 HingeLoss: 0.09584787229394999
iteration: 6 HingeLoss: 0.09524019605454735
iteration: 7 HingeLoss: 0.09463637248712485
iteration: 8 HingeLoss: 0.0940363771657127
iteration: 9 HingeLoss: 0.09344018581920223
iteration: 10 HingeLoss: 0.09284777433036337
iteration: 11 HingeLoss: 0.09225911873486996
iteration: 12 HingeLoss: 0.09167419522032952
iteration: 13 HingeLoss: 0.09109298012532041
iteration: 14 HingeLoss: 0.09051544993843463
iteration: 15 HingeLoss: 0.08994158129732668
iteration: 16 HingeLoss: 0.0893713509877684
iteration: 17 HingeLoss: 0.08880473594271009
iteration: 18 HingeLoss: 0.08824171324134746
iteration: 19 HingeLoss: 0.087682260108194
iteration: 20 HingeLoss: 0.08712635391216018
iteration: 21 HingeLoss: 0.08657397216563766
iteration: 22 HingeLoss: 0.0860250925235898
iteration: 23 HingeLoss: 0.08547969278264739
iteration: 24 HingeLoss: 0.0849377508802112
iteration: 25 HingeLoss: 0.08439924489355868
iteration: 26 HingeLoss: 0.08386415303895763
iteration: 27 HingeLoss: 0.0833324536707849
iteration: 28 HingeLoss: 0.08280412528065072
iteration: 29 HingeLoss: 0.08227914649652861
iteration: 30 HingeLoss: 0.08175749608189108
iteration: 31 HingeLoss: 0.08123915293485022
iteration: 32 HingeLoss: 0.08072409608730437
iteration: 33 HingeLoss: 0.0802123047040897
iteration: 34 HingeLoss: 0.07970375808213746
iteration: 35 HingeLoss: 0.07919843564963668
iteration: 36 HingeLoss: 0.07869631696520162
iteration: 37 HingeLoss: 0.07819738171704521
iteration: 38 HingeLoss: 0.07770160972215721
iteration: 39 HingeLoss: 0.07720898092548788
```

Output\_hinge\_train.txt

iteration: 40 HingeLoss: 0.07671947539913651  
iteration: 41 HingeLoss: 0.07623307334154564  
iteration: 42 HingeLoss: 0.07574975507669966  
iteration: 43 HingeLoss: 0.07526950105332912  
iteration: 44 HingeLoss: 0.0747922918441198  
iteration: 45 HingeLoss: 0.07431810814492668  
iteration: 46 HingeLoss: 0.0738469307739933  
iteration: 47 HingeLoss: 0.07337874067117559  
iteration: 48 HingeLoss: 0.07291351889717097  
iteration: 49 HingeLoss: 0.07245124663275226  
iteration: 50 HingeLoss: 0.07199190517800619  
iteration: 51 HingeLoss: 0.07153547595157711  
iteration: 52 HingeLoss: 0.07108194048991544  
iteration: 53 HingeLoss: 0.07063128044653046  
iteration: 54 HingeLoss: 0.07018347759124843  
iteration: 55 HingeLoss: 0.06973851380947509  
iteration: 56 HingeLoss: 0.06929637110146278  
iteration: 57 HingeLoss: 0.06885703158158238  
iteration: 58 HingeLoss: 0.06842047747759981  
iteration: 59 HingeLoss: 0.06798669112995713  
iteration: 60 HingeLoss: 0.06755565499105805  
iteration: 61 HingeLoss: 0.06712735162455821  
iteration: 62 HingeLoss: 0.06670176370465988  
iteration: 63 HingeLoss: 0.06627887401541087  
iteration: 64 HingeLoss: 0.06585866545000836  
iteration: 65 HingeLoss: 0.06544112101010684  
iteration: 66 HingeLoss: 0.06502622380513025  
iteration: 67 HingeLoss: 0.06461395705158912  
iteration: 68 HingeLoss: 0.06420430407240131  
iteration: 69 HingeLoss: 0.06379724829621755  
iteration: 70 HingeLoss: 0.06339277325675102  
iteration: 71 HingeLoss: 0.06299086259211135  
iteration: 72 HingeLoss: 0.06259150004414256  
iteration: 73 HingeLoss: 0.06219466945776559  
iteration: 74 HingeLoss: 0.06180035478032475  
iteration: 75 HingeLoss: 0.06140854006093817  
iteration: 76 HingeLoss: 0.061019209449852854  
iteration: 77 HingeLoss: 0.0606323471978032  
iteration: 78 HingeLoss: 0.06024793765537418  
iteration: 79 HingeLoss: 0.05986596527236816  
iteration: 80 HingeLoss: 0.05948641459717584  
iteration: 81 HingeLoss: 0.05910927027615123  
iteration: 82 HingeLoss: 0.058734517052990654  
iteration: 83 HingeLoss: 0.058362139768115426  
iteration: 84 HingeLoss: 0.05799212335805878  
iteration: 85 HingeLoss: 0.05762445285485636  
iteration: 86 HingeLoss: 0.05725911338544093  
iteration: 87 HingeLoss: 0.05689609017104052  
iteration: 88 HingeLoss: 0.0565353685265807  
iteration: 89 HingeLoss: 0.05617693386009059  
iteration: 90 HingeLoss: 0.05582077167211241  
iteration: 91 HingeLoss: 0.05546686755511512

# Output\_hinge\_train.txt

```

iteration: 92 HingeLoss: 0.05511520719291153
iteration: 93 HingeLoss: 0.054765776360079205
iteration: 94 HingeLoss: 0.05441856092138492
iteration: 95 HingeLoss: 0.05407354683121305
iteration: 96 HingeLoss: 0.05373072013299721
iteration: 97 HingeLoss: 0.0533900669586557
iteration: 98 HingeLoss: 0.05305157352803069
iteration: 99 HingeLoss: 0.05271522614833056
[-0.00214857 -0.00021612 -0.0003871 ... 0.00162779 0.0009853
 0.00014641]

```

## CROSS VALIDATION 8

```

iteration: 0 HingeLoss: 23.696154809921225
iteration: 1 HingeLoss: 0.8208648106262272
iteration: 2 HingeLoss: 0.1649217958984311
iteration: 3 HingeLoss: 0.09707566886075765
iteration: 4 HingeLoss: 0.09646020838178236
iteration: 5 HingeLoss: 0.09584864992692527
iteration: 6 HingeLoss: 0.09524096875732373
iteration: 7 HingeLoss: 0.09463714029095967
iteration: 8 HingeLoss: 0.0940371401016654
iteration: 9 HingeLoss: 0.09344094391813515
iteration: 10 HingeLoss: 0.09284852762294331
iteration: 11 HingeLoss: 0.09225986725156916
iteration: 12 HingeLoss: 0.09167493899142716
iteration: 13 HingeLoss: 0.09109371918090366
iteration: 14 HingeLoss: 0.09051618430839985
iteration: 15 HingeLoss: 0.08994231101138074
iteration: 16 HingeLoss: 0.08937207607542981
iteration: 17 HingeLoss: 0.08880545643331025
iteration: 18 HingeLoss: 0.08824242916403173
iteration: 19 HingeLoss: 0.08768297149192299
iteration: 20 HingeLoss: 0.0871270607857109
iteration: 21 HingeLoss: 0.08657467455760469
iteration: 22 HingeLoss: 0.08602579046238636
iteration: 23 HingeLoss: 0.08548038629650676
iteration: 24 HingeLoss: 0.0849384399971874
iteration: 25 HingeLoss: 0.08439992964152801
iteration: 26 HingeLoss: 0.08386483344561964
iteration: 27 HingeLoss: 0.08333312976366346
iteration: 28 HingeLoss: 0.08280479708709526
iteration: 29 HingeLoss: 0.08227981404371525
iteration: 30 HingeLoss: 0.08175815939682346
iteration: 31 HingeLoss: 0.08123981204436091
iteration: 32 HingeLoss: 0.08072475101805572
iteration: 33 HingeLoss: 0.08021295548257508
iteration: 34 HingeLoss: 0.07970440473468238
iteration: 35 HingeLoss: 0.07919907820239946
iteration: 36 HingeLoss: 0.07869695544417506
iteration: 37 HingeLoss: 0.07819801614805709
iteration: 38 HingeLoss: 0.07770224013087164
iteration: 39 HingeLoss: 0.07720960733740623
iteration: 40 HingeLoss: 0.07672009783959856

```



# Output\_hinge\_train.txt

```

iteration: 41 HingeLoss: 0.07623369183573042
iteration: 42 HingeLoss: 0.07575036964962659
iteration: 43 HingeLoss: 0.07527011172985903
iteration: 44 HingeLoss: 0.07479289864895587
iteration: 45 HingeLoss: 0.07431871110261541
iteration: 46 HingeLoss: 0.07384752990892572
iteration: 47 HingeLoss: 0.07337933600758798
iteration: 48 HingeLoss: 0.07291411045914603
iteration: 49 HingeLoss: 0.07245183444421988
iteration: 50 HingeLoss: 0.07199248926274462
iteration: 51 HingeLoss: 0.07153605633321389
iteration: 52 HingeLoss: 0.07108251719192824
iteration: 53 HingeLoss: 0.07063185349224811
iteration: 54 HingeLoss: 0.07018404700385186
iteration: 55 HingeLoss: 0.06973907961199828
iteration: 56 HingeLoss: 0.0692969333167937
iteration: 57 HingeLoss: 0.06885759023246378
iteration: 58 HingeLoss: 0.06842103258663039
iteration: 59 HingeLoss: 0.06798724271959222
iteration: 60 HingeLoss: 0.06755620308361064
iteration: 61 HingeLoss: 0.06712789624219988
iteration: 62 HingeLoss: 0.06670230486942154
iteration: 63 HingeLoss: 0.06627941174918382
iteration: 64 HingeLoss: 0.06585919977454512
iteration: 65 HingeLoss: 0.06544165194702192
iteration: 66 HingeLoss: 0.06502675137590126
iteration: 67 HingeLoss: 0.06461448127755744
iteration: 68 HingeLoss: 0.06420482497477306
iteration: 69 HingeLoss: 0.06379776589606426
iteration: 70 HingeLoss: 0.0633932875750108
iteration: 71 HingeLoss: 0.06299137364958939
iteration: 72 HingeLoss: 0.06259200786151232
iteration: 73 HingeLoss: 0.062195174055569374
iteration: 74 HingeLoss: 0.061800856178974656
iteration: 75 HingeLoss: 0.061409038280716824
iteration: 76 HingeLoss: 0.06101970451091427
iteration: 77 HingeLoss: 0.060632839120173754
iteration: 78 HingeLoss: 0.06024842645895315
iteration: 79 HingeLoss: 0.05986645097692872
iteration: 80 HingeLoss: 0.05948689722236576
iteration: 81 HingeLoss: 0.05910974984149379
iteration: 82 HingeLoss: 0.058734993577885315
iteration: 83 HingeLoss: 0.05836261327183864
iteration: 84 HingeLoss: 0.05799259385976477
iteration: 85 HingeLoss: 0.05762492037357799
iteration: 86 HingeLoss: 0.05725957794009026
iteration: 87 HingeLoss: 0.056896551780409865
iteration: 88 HingeLoss: 0.05653582720934313
iteration: 89 HingeLoss: 0.05617738963480082
iteration: 90 HingeLoss: 0.055821224557207484
iteration: 91 HingeLoss: 0.05546731756891522
iteration: 92 HingeLoss: 0.05511565435362078

```

Output\_hinge\_train.txt

iteration: 93 HingeLoss: 0.05476622068578612  
iteration: 94 HingeLoss: 0.054419002430063486  
iteration: 95 HingeLoss: 0.05407398554072325  
iteration: 96 HingeLoss: 0.05373115606108572  
iteration: 97 HingeLoss: 0.05339050012295689  
iteration: 98 HingeLoss: 0.05305200394606692  
iteration: 99 HingeLoss: 0.052715653837513136  
[-1.64029451e-03 4.04400244e-04 -1.06094424e-03 ... 1.31091126e-03  
-1.34624900e-04 7.17501373e-05]

CROSS VALIDATION 9

iteration: 0 HingeLoss: 11.106426745739403  
iteration: 1 HingeLoss: 0.47265415871000804  
iteration: 2 HingeLoss: 0.09588597135335045  
iteration: 3 HingeLoss: 0.0952780535656214  
iteration: 4 HingeLoss: 0.09467398998129073  
iteration: 5 HingeLoss: 0.09407375616467951  
iteration: 6 HingeLoss: 0.09347732783503113  
iteration: 7 HingeLoss: 0.09288468086552948  
iteration: 8 HingeLoss: 0.09229579128232238  
iteration: 9 HingeLoss: 0.09171063526355214  
iteration: 10 HingeLoss: 0.09112918913839184  
iteration: 11 HingeLoss: 0.09055142938608776  
iteration: 12 HingeLoss: 0.08997733263500798  
iteration: 13 HingeLoss: 0.0894068756616969  
iteration: 14 HingeLoss: 0.0888400353899357  
iteration: 15 HingeLoss: 0.08827678888980907  
iteration: 16 HingeLoss: 0.08771711337677764  
iteration: 17 HingeLoss: 0.08716098621075587  
iteration: 18 HingeLoss: 0.0866083848951968  
iteration: 19 HingeLoss: 0.08605928707618177  
iteration: 20 HingeLoss: 0.08551367054151587  
iteration: 21 HingeLoss: 0.08497151321983  
iteration: 22 HingeLoss: 0.08443279317968752  
iteration: 23 HingeLoss: 0.0838974886286972  
iteration: 24 HingeLoss: 0.08336557791263195  
iteration: 25 HingeLoss: 0.08283703951455244  
iteration: 26 HingeLoss: 0.08231185205393707  
iteration: 27 HingeLoss: 0.08178999428581682  
iteration: 28 HingeLoss: 0.0812714450999159  
iteration: 29 HingeLoss: 0.0807561835197979  
iteration: 30 HingeLoss: 0.08024418870201712  
iteration: 31 HingeLoss: 0.07973543993527551  
iteration: 32 HingeLoss: 0.07922991663958483  
iteration: 33 HingeLoss: 0.07872759836543405  
iteration: 34 HingeLoss: 0.07822846479296221  
iteration: 35 HingeLoss: 0.07773249573113648  
iteration: 36 HingeLoss: 0.07723967111693526  
iteration: 37 HingeLoss: 0.07674997101453675  
iteration: 38 HingeLoss: 0.07626337561451224  
iteration: 39 HingeLoss: 0.07577986523302517  
iteration: 40 HingeLoss: 0.07529942031103448  
iteration: 41 HingeLoss: 0.0748220214135037

Output\_hinge\_train.txt

iteration: 42 HingeLoss: 0.07434764922861456  
iteration: 43 HingeLoss: 0.07387628456698585  
iteration: 44 HingeLoss: 0.07340790836089735  
iteration: 45 HingeLoss: 0.07294250166351804  
iteration: 46 HingeLoss: 0.07248004564814026  
iteration: 47 HingeLoss: 0.07202052160741755  
iteration: 48 HingeLoss: 0.07156391095260836  
iteration: 49 HingeLoss: 0.07111019521282383  
iteration: 50 HingeLoss: 0.0706593560342807  
iteration: 51 HingeLoss: 0.07021137517955883  
iteration: 52 HingeLoss: 0.06976623452686335  
iteration: 53 HingeLoss: 0.06932391606929195  
iteration: 54 HingeLoss: 0.068884401914106  
iteration: 55 HingeLoss: 0.06844767428200703  
iteration: 56 HingeLoss: 0.06801371550641752  
iteration: 57 HingeLoss: 0.06758250803276614  
iteration: 58 HingeLoss: 0.06715403441777763  
iteration: 59 HingeLoss: 0.0667282773287673  
iteration: 60 HingeLoss: 0.06630521954293978  
iteration: 61 HingeLoss: 0.06588484394669236  
iteration: 62 HingeLoss: 0.0654671335349227  
iteration: 63 HingeLoss: 0.06505207141034096  
iteration: 64 HingeLoss: 0.06463964078278617  
iteration: 65 HingeLoss: 0.06422982496854722  
iteration: 66 HingeLoss: 0.06382260738968777  
iteration: 67 HingeLoss: 0.06341797157337577  
iteration: 68 HingeLoss: 0.06301590115121697  
iteration: 69 HingeLoss: 0.062616379858593  
iteration: 70 HingeLoss: 0.0622193915340032  
iteration: 71 HingeLoss: 0.06182492011841097  
iteration: 72 HingeLoss: 0.06143294965459409  
iteration: 73 HingeLoss: 0.06104346428649927  
iteration: 74 HingeLoss: 0.060656448258600816  
iteration: 75 HingeLoss: 0.06027188591526301  
iteration: 76 HingeLoss: 0.05988976170010711  
iteration: 77 HingeLoss: 0.05951006015538193  
iteration: 78 HingeLoss: 0.05913276592133846  
iteration: 79 HingeLoss: 0.05875786373560864  
iteration: 80 HingeLoss: 0.05838533843258802  
iteration: 81 HingeLoss: 0.058015174942822184  
iteration: 82 HingeLoss: 0.057647358292397075  
iteration: 83 HingeLoss: 0.057281873602333395  
iteration: 84 HingeLoss: 0.05691870608798475  
iteration: 85 HingeLoss: 0.05655784105843949  
iteration: 86 HingeLoss: 0.056199263915926424  
iteration: 87 HingeLoss: 0.0558429601552244  
iteration: 88 HingeLoss: 0.05548891536307541  
iteration: 89 HingeLoss: 0.05513711521760165  
iteration: 90 HingeLoss: 0.05478754548772612  
iteration: 91 HingeLoss: 0.05444019203259703  
iteration: 92 HingeLoss: 0.05409504080101551  
iteration: 93 HingeLoss: 0.053752077830867606

Output\_hinge\_train.txt

iteration: 94 HingeLoss: 0.05341128924855921  
iteration: 95 HingeLoss: 0.05307266126845474  
iteration: 96 HingeLoss: 0.05273618019231994  
iteration: 97 HingeLoss: 0.05240183240876723  
iteration: 98 HingeLoss: 0.05206960439270542  
iteration: 99 HingeLoss: 0.05173948270479251  
[-0.00218091 -0.0001951 -0.00061895 ... 0.00149392 0.0011878  
0.00014581]

CROSS VALIDATION 10

iteration: 0 HingeLoss: 13.41877843484932  
iteration: 1 HingeLoss: 11.635857213577038  
iteration: 2 HingeLoss: 0.0976629729726454  
iteration: 3 HingeLoss: 0.09704378898113346  
iteration: 4 HingeLoss: 0.09642853062083752  
iteration: 5 HingeLoss: 0.0958171730032258  
iteration: 6 HingeLoss: 0.0952096913975599  
iteration: 7 HingeLoss: 0.09460606122989469  
iteration: 8 HingeLoss: 0.09400625808208392  
iteration: 9 HingeLoss: 0.09341025769079268  
iteration: 10 HingeLoss: 0.0928180359465157  
iteration: 11 HingeLoss: 0.09222956889260202  
iteration: 12 HingeLoss: 0.09164483272428635  
iteration: 13 HingeLoss: 0.0910638037877255  
iteration: 14 HingeLoss: 0.090486458579042  
iteration: 15 HingeLoss: 0.08991277374337313  
iteration: 16 HingeLoss: 0.08934272607392602  
iteration: 17 HingeLoss: 0.08877629251103929  
iteration: 18 HingeLoss: 0.08821345014124975  
iteration: 19 HingeLoss: 0.08765417619636585  
iteration: 20 HingeLoss: 0.08709844805254663  
iteration: 21 HingeLoss: 0.08654624322938637  
iteration: 22 HingeLoss: 0.08599753938900523  
iteration: 23 HingeLoss: 0.08545231433514573  
iteration: 24 HingeLoss: 0.08491054601227492  
iteration: 25 HingeLoss: 0.08437221250469204  
iteration: 26 HingeLoss: 0.08383729203564201  
iteration: 27 HingeLoss: 0.08330576296643459  
iteration: 28 HingeLoss: 0.08277760379556905  
iteration: 29 HingeLoss: 0.08225279315786413  
iteration: 30 HingeLoss: 0.08173130982359414  
iteration: 31 HingeLoss: 0.08121313269763009  
iteration: 32 HingeLoss: 0.08069824081858613  
iteration: 33 HingeLoss: 0.08018661335797174  
iteration: 34 HingeLoss: 0.07967822961934938  
iteration: 35 HingeLoss: 0.07917306903749684  
iteration: 36 HingeLoss: 0.0786711117757565  
iteration: 37 HingeLoss: 0.07817233573430452  
iteration: 38 HingeLoss: 0.07767672253113762  
iteration: 39 HingeLoss: 0.07718425151944867  
iteration: 40 HingeLoss: 0.0766949027777197  
iteration: 41 HingeLoss: 0.0762086565107355  
iteration: 42 HingeLoss: 0.07572549304878261

# Output\_hinge\_train.txt

```

iteration: 43 HingeLoss: 0.07524539284685358
iteration: 44 HingeLoss: 0.07476833648385671
iteration: 45 HingeLoss: 0.07429430466182983
iteration: 46 HingeLoss: 0.07382327820516035
iteration: 47 HingeLoss: 0.07335523805980898
iteration: 48 HingeLoss: 0.07289016529253924
iteration: 49 HingeLoss: 0.0724280410901515
iteration: 50 HingeLoss: 0.07196884675872199
iteration: 51 HingeLoss: 0.07151256372284662
iteration: 52 HingeLoss: 0.07105917352488934
iteration: 53 HingeLoss: 0.07060865782423582
iteration: 54 HingeLoss: 0.07016099839655122
iteration: 55 HingeLoss: 0.06971617713304328
iteration: 56 HingeLoss: 0.06927417603972943
iteration: 57 HingeLoss: 0.06883497723670923
iteration: 58 HingeLoss: 0.06839856295744089
iteration: 59 HingeLoss: 0.06796491554802273
iteration: 60 HingeLoss: 0.06753401746647873
iteration: 61 HingeLoss: 0.06710585128204932
iteration: 62 HingeLoss: 0.06668039967448604
iteration: 63 HingeLoss: 0.06625764543335083
iteration: 64 HingeLoss: 0.06583757145732005
iteration: 65 HingeLoss: 0.0654201607534926
iteration: 66 HingeLoss: 0.06500539643670242
iteration: 67 HingeLoss: 0.06459326172883555
iteration: 68 HingeLoss: 0.06418373995815142
iteration: 69 HingeLoss: 0.0637768145586084
iteration: 70 HingeLoss: 0.06337246906919373
iteration: 71 HingeLoss: 0.06297068713325761
iteration: 72 HingeLoss: 0.06257145249785141
iteration: 73 HingeLoss: 0.062174749013070456
iteration: 74 HingeLoss: 0.061780560631400465
iteration: 75 HingeLoss: 0.06138887140706869
iteration: 76 HingeLoss: 0.060999665495398495
iteration: 77 HingeLoss: 0.060612927152168754
iteration: 78 HingeLoss: 0.06022864073297677
iteration: 79 HingeLoss: 0.059846790692605505
iteration: 80 HingeLoss: 0.059467361584394696
iteration: 81 HingeLoss: 0.05909033805961607
iteration: 82 HingeLoss: 0.05871570486685231
iteration: 83 HingeLoss: 0.05834344685138034
iteration: 84 HingeLoss: 0.05797354895455795
iteration: 85 HingeLoss: 0.05760599621321505
iteration: 86 HingeLoss: 0.05724077375904801
iteration: 87 HingeLoss: 0.05687786681801842
iteration: 88 HingeLoss: 0.0565172607097554
iteration: 89 HingeLoss: 0.056158940846961665
iteration: 90 HingeLoss: 0.05580289273482358
iteration: 91 HingeLoss: 0.055449101970424665
iteration: 92 HingeLoss: 0.055097554242163164
iteration: 93 HingeLoss: 0.054748235329172855
iteration: 94 HingeLoss: 0.05440113110074796

```

Output\_hinge\_train.txt

iteration: 95 HingeLoss: 0.05405622751577152  
iteration: 96 HingeLoss: 0.05371351062214731  
iteration: 97 HingeLoss: 0.05337296655623551  
iteration: 98 HingeLoss: 0.053034581542291924  
iteration: 99 HingeLoss: 0.05269834189191061  
[-1.44690747e-03 -9.18866210e-05 -1.03339046e-03 ... 1.69332315e-03  
7.16957435e-04 2.91453590e-04]

CROSS VALIDATION 11

iteration: 0 HingeLoss: 20.84562525237204  
iteration: 1 HingeLoss: 1.397307778329663  
iteration: 2 HingeLoss: 0.7568605391927089  
iteration: 3 HingeLoss: 0.09707626518197314  
iteration: 4 HingeLoss: 0.09646080092231686  
iteration: 5 HingeLoss: 0.09584923871074826  
iteration: 6 HingeLoss: 0.09524155380825276  
iteration: 7 HingeLoss: 0.0946377216326614  
iteration: 8 HingeLoss: 0.09403771775765632  
iteration: 9 HingeLoss: 0.09344151791178268  
iteration: 10 HingeLoss: 0.0928490979774668  
iteration: 11 HingeLoss: 0.09226043399004064  
iteration: 12 HingeLoss: 0.09167550213677239  
iteration: 13 HingeLoss: 0.09109427875590313  
iteration: 14 HingeLoss: 0.09051674033568954  
iteration: 15 HingeLoss: 0.0899428635134532  
iteration: 16 HingeLoss: 0.08937262507463498  
iteration: 17 HingeLoss: 0.08880600195185626  
iteration: 18 HingeLoss: 0.08824297122398599  
iteration: 19 HingeLoss: 0.08768351011521298  
iteration: 20 HingeLoss: 0.08712759599412521  
iteration: 21 HingeLoss: 0.08657520637279358  
iteration: 22 HingeLoss: 0.08602631890586286  
iteration: 23 HingeLoss: 0.08548091138964764  
iteration: 24 HingeLoss: 0.08493896176123374  
iteration: 25 HingeLoss: 0.08440044809758633  
iteration: 26 HingeLoss: 0.0838653486146626  
iteration: 27 HingeLoss: 0.08333364166653077  
iteration: 28 HingeLoss: 0.08280530574449455  
iteration: 29 HingeLoss: 0.08228031947622269  
iteration: 30 HingeLoss: 0.08175866162488497  
iteration: 31 HingeLoss: 0.08124031108829269  
iteration: 32 HingeLoss: 0.08072524689804524  
iteration: 33 HingeLoss: 0.08021344821868168  
iteration: 34 HingeLoss: 0.07970489434683829  
iteration: 35 HingeLoss: 0.07919956471041063  
iteration: 36 HingeLoss: 0.07869743886772167  
iteration: 37 HingeLoss: 0.07819849650669473  
iteration: 38 HingeLoss: 0.07770271744403189  
iteration: 39 HingeLoss: 0.0772100816243974  
iteration: 40 HingeLoss: 0.07672056911960663  
iteration: 41 HingeLoss: 0.07623416012781963  
iteration: 42 HingeLoss: 0.07575083497274038  
iteration: 43 HingeLoss: 0.07527057410282072

Output\_hinge\_train.txt

iteration: 44 HingeLoss: 0.07479335809046944  
iteration: 45 HingeLoss: 0.07431916763126636  
iteration: 46 HingeLoss: 0.0738479835431815  
iteration: 47 HingeLoss: 0.07337978676579918  
iteration: 48 HingeLoss: 0.07291455835954669  
iteration: 49 HingeLoss: 0.07245227950492862  
iteration: 50 HingeLoss: 0.07199293150176507  
iteration: 51 HingeLoss: 0.07153649576843561  
iteration: 52 HingeLoss: 0.07108295384112726  
iteration: 53 HingeLoss: 0.07063228737308792  
iteration: 54 HingeLoss: 0.07018447813388388  
iteration: 55 HingeLoss: 0.06973950800866262  
iteration: 56 HingeLoss: 0.06929735899741986  
iteration: 57 HingeLoss: 0.06885801321427157  
iteration: 58 HingeLoss: 0.06842145288673031  
iteration: 59 HingeLoss: 0.06798766035498631  
iteration: 60 HingeLoss: 0.06755661807119316  
iteration: 61 HingeLoss: 0.06712830859875794  
iteration: 62 HingeLoss: 0.06670271461163592  
iteration: 63 HingeLoss: 0.0662798188936294  
iteration: 64 HingeLoss: 0.06585960433769185  
iteration: 65 HingeLoss: 0.06544205394523524  
iteration: 66 HingeLoss: 0.06502715082544286  
iteration: 67 HingeLoss: 0.0646148781945859  
iteration: 68 HingeLoss: 0.0642052193753445  
iteration: 69 HingeLoss: 0.06379815779613311  
iteration: 70 HingeLoss: 0.06339367699043019  
iteration: 71 HingeLoss: 0.06299176059611208  
iteration: 72 HingeLoss: 0.06259239235479111  
iteration: 73 HingeLoss: 0.06219555611115788  
iteration: 74 HingeLoss: 0.06180123581232777  
iteration: 75 HingeLoss: 0.061409415507191645  
iteration: 76 HingeLoss: 0.06102007934577036  
iteration: 77 HingeLoss: 0.060633211578573994  
iteration: 78 HingeLoss: 0.06024879655596432  
iteration: 79 HingeLoss: 0.059866818727522024  
iteration: 80 HingeLoss: 0.059487262641417515  
iteration: 81 HingeLoss: 0.05911011294378597  
iteration: 82 HingeLoss: 0.05873535437810617  
iteration: 83 HingeLoss: 0.05836297178458335  
iteration: 84 HingeLoss: 0.05799295009953597  
iteration: 85 HingeLoss: 0.05762527435478631  
iteration: 86 HingeLoss: 0.057259929677055066  
iteration: 87 HingeLoss: 0.05689690128735962  
iteration: 88 HingeLoss: 0.056536174500416175  
iteration: 89 HingeLoss: 0.05617773472404578  
iteration: 90 HingeLoss: 0.055821567458584055  
iteration: 91 HingeLoss: 0.055467658296294464  
iteration: 92 HingeLoss: 0.0551159929207858  
iteration: 93 HingeLoss: 0.05476655710643277  
iteration: 94 HingeLoss: 0.054419336717800686  
iteration: 95 HingeLoss: 0.05407431770907364

Output\_hinge\_train.txt

iteration: 96 HingeLoss: 0.05373148612348626  
iteration: 97 HingeLoss: 0.05339082809275928  
iteration: 98 HingeLoss: 0.05305232983653824  
iteration: 99 HingeLoss: 0.05271597766183642  
[-0.0021486 -0.00021614 -0.00038713 ... 0.00162779 0.00098532  
0.00014641]

CROSS VALIDATION 12

iteration: 0 HingeLoss: 19.2562364798849  
iteration: 1 HingeLoss: 4.5245205481179855  
iteration: 2 HingeLoss: 0.10495227827336276  
iteration: 3 HingeLoss: 0.10428688003079886  
iteration: 4 HingeLoss: 0.10362570041815396  
iteration: 5 HingeLoss: 0.10296871268928258  
iteration: 6 HingeLoss: 0.10231589026760952  
iteration: 7 HingeLoss: 0.10166720674505549  
iteration: 8 HingeLoss: 0.10102263588096859  
iteration: 9 HingeLoss: 0.10038215160106297  
iteration: 10 HingeLoss: 0.09974572799636366  
iteration: 11 HingeLoss: 0.09911333932215902  
iteration: 12 HingeLoss: 0.09848495999695911  
iteration: 13 HingeLoss: 0.09786056460146068  
iteration: 14 HingeLoss: 0.09724012787751915  
iteration: 15 HingeLoss: 0.09662362472712663  
iteration: 16 HingeLoss: 0.09601103021139702  
iteration: 17 HingeLoss: 0.09540231954955683  
iteration: 18 HingeLoss: 0.09479746811794273  
iteration: 19 HingeLoss: 0.09419645144900586  
iteration: 20 HingeLoss: 0.09359924523032166  
iteration: 21 HingeLoss: 0.09300582530360643  
iteration: 22 HingeLoss: 0.09241616766374043  
iteration: 23 HingeLoss: 0.09183024845779637  
iteration: 24 HingeLoss: 0.09124804398407481  
iteration: 25 HingeLoss: 0.09066953069114499  
iteration: 26 HingeLoss: 0.09009468517689281  
iteration: 27 HingeLoss: 0.08952348418757355  
iteration: 28 HingeLoss: 0.08895590461687138  
iteration: 29 HingeLoss: 0.08839192350496461  
iteration: 30 HingeLoss: 0.0878315180375973  
iteration: 31 HingeLoss: 0.08727466554515576  
iteration: 32 HingeLoss: 0.08672134350175188  
iteration: 33 HingeLoss: 0.08617152952431208  
iteration: 34 HingeLoss: 0.0856252013716713  
iteration: 35 HingeLoss: 0.0850823369436739  
iteration: 36 HingeLoss: 0.08454291428027921  
iteration: 37 HingeLoss: 0.08400691156067355  
iteration: 38 HingeLoss: 0.08347430710238726  
iteration: 39 HingeLoss: 0.08294507936041765  
iteration: 40 HingeLoss: 0.08241920692635771  
iteration: 41 HingeLoss: 0.08189666852752975  
iteration: 42 HingeLoss: 0.08137744302612493  
iteration: 43 HingeLoss: 0.08086150941834849  
iteration: 44 HingeLoss: 0.08034884683356976



Output\_hinge\_train.txt

iteration: 45 HingeLoss: 0.07983943453347804  
iteration: 46 HingeLoss: 0.07933325191124377  
iteration: 47 HingeLoss: 0.07883027849068464  
iteration: 48 HingeLoss: 0.07833049392543771  
iteration: 49 HingeLoss: 0.07783387799813594  
iteration: 50 HingeLoss: 0.07734041061959084  
iteration: 51 HingeLoss: 0.07685007182797916  
iteration: 52 HingeLoss: 0.07636284178803605  
iteration: 53 HingeLoss: 0.07587870079025226  
iteration: 54 HingeLoss: 0.07539762925007697  
iteration: 55 HingeLoss: 0.07491960770712562  
iteration: 56 HingeLoss: 0.07444461682439264  
iteration: 57 HingeLoss: 0.07397263738746913  
iteration: 58 HingeLoss: 0.07350365030376585  
iteration: 59 HingeLoss: 0.07303763660174055  
iteration: 60 HingeLoss: 0.07257457743013072  
iteration: 61 HingeLoss: 0.07211445405719122  
iteration: 62 HingeLoss: 0.07165724786993595  
iteration: 63 HingeLoss: 0.07120294037338558  
iteration: 64 HingeLoss: 0.07075151318981908  
iteration: 65 HingeLoss: 0.07030294805803004  
iteration: 66 HingeLoss: 0.06985722683258858  
iteration: 67 HingeLoss: 0.06941433148310676  
iteration: 68 HingeLoss: 0.06897424409350945  
iteration: 69 HingeLoss: 0.06853694686130969  
iteration: 70 HingeLoss: 0.06810242209688837  
iteration: 71 HingeLoss: 0.06767065222277867  
iteration: 72 HingeLoss: 0.067241619772955  
iteration: 73 HingeLoss: 0.06681530739212661  
iteration: 74 HingeLoss: 0.06639169783503542  
iteration: 75 HingeLoss: 0.06597077396575836  
iteration: 76 HingeLoss: 0.06555251875701423  
iteration: 77 HingeLoss: 0.06513691528947486  
iteration: 78 HingeLoss: 0.06472394675108105  
iteration: 79 HingeLoss: 0.06431359643636185  
iteration: 80 HingeLoss: 0.06390584774575925  
iteration: 81 HingeLoss: 0.0635006841849566  
iteration: 82 HingeLoss: 0.06309808936421125  
iteration: 83 HingeLoss: 0.06269804699769171  
iteration: 84 HingeLoss: 0.06230054090281884  
iteration: 85 HingeLoss: 0.06190555499961103  
iteration: 86 HingeLoss: 0.06151307331003405  
iteration: 87 HingeLoss: 0.06112307995735428  
iteration: 88 HingeLoss: 0.06073555916549697  
iteration: 89 HingeLoss: 0.06035049525840774  
iteration: 90 HingeLoss: 0.05996787265941836  
iteration: 91 HingeLoss: 0.059587675890616976  
iteration: 92 HingeLoss: 0.05920988957222173  
iteration: 93 HingeLoss: 0.05883449842195871  
iteration: 94 HingeLoss: 0.058461487254443736  
iteration: 95 HingeLoss: 0.0580908409805681  
iteration: 96 HingeLoss: 0.05772254460688807

Output\_hinge\_train.txt

iteration: 97 HingeLoss: 0.057356583235018646  
iteration: 98 HingeLoss: 0.05699294206103052  
iteration: 99 HingeLoss: 0.05663160637485145  
[-3.23262221e-03 -4.12832276e-04 -1.33727833e-03 ... 1.51706631e-03  
9.24030426e-04 7.31888217e-05]

CROSS VALIDATION 13

iteration: 0 HingeLoss: 20.847201043906438  
iteration: 1 HingeLoss: 1.3969233827263317  
iteration: 2 HingeLoss: 0.7575254299542705  
iteration: 3 HingeLoss: 0.09707675124129864  
iteration: 4 HingeLoss: 0.0964612839000225  
iteration: 5 HingeLoss: 0.09584971862637157  
iteration: 6 HingeLoss: 0.0952420306812074  
iteration: 7 HingeLoss: 0.0946381954822379  
iteration: 8 HingeLoss: 0.09403818860302292  
iteration: 9 HingeLoss: 0.09344198577198602  
iteration: 10 HingeLoss: 0.09284956287143292  
iteration: 11 HingeLoss: 0.09226089593657545  
iteration: 12 HingeLoss: 0.09167596115456267  
iteration: 13 HingeLoss: 0.0910947348635171  
iteration: 14 HingeLoss: 0.09051719355157783  
iteration: 15 HingeLoss: 0.08994331385594927  
iteration: 16 HingeLoss: 0.08937307256195616  
iteration: 17 HingeLoss: 0.08880644660210445  
iteration: 18 HingeLoss: 0.08824341305514823  
iteration: 19 HingeLoss: 0.08768394914516232  
iteration: 20 HingeLoss: 0.08712803224062128  
iteration: 21 HingeLoss: 0.08657563985348359  
iteration: 22 HingeLoss: 0.08602674963828201  
iteration: 23 HingeLoss: 0.08548133939121996  
iteration: 24 HingeLoss: 0.08493938704927288  
iteration: 25 HingeLoss: 0.08440087068929603  
iteration: 26 HingeLoss: 0.08386576852713762  
iteration: 27 HingeLoss: 0.08333405891675753  
iteration: 28 HingeLoss: 0.08280572034935166  
iteration: 29 HingeLoss: 0.0822807314524819  
iteration: 30 HingeLoss: 0.08175907098921154  
iteration: 31 HingeLoss: 0.08124071785724633  
iteration: 32 HingeLoss: 0.08072565108808057  
iteration: 33 HingeLoss: 0.08021384984614911  
iteration: 34 HingeLoss: 0.07970529342798456  
iteration: 35 HingeLoss: 0.07919996126137938  
iteration: 36 HingeLoss: 0.07869783290455426  
iteration: 37 HingeLoss: 0.07819888804533079  
iteration: 38 HingeLoss: 0.07770310650031004  
iteration: 39 HingeLoss: 0.07721046821405578  
iteration: 40 HingeLoss: 0.07672095325828361  
iteration: 41 HingeLoss: 0.07623454183105453  
iteration: 42 HingeLoss: 0.07575121425597388  
iteration: 43 HingeLoss: 0.07527095098139562  
iteration: 44 HingeLoss: 0.07479373257963129  
iteration: 45 HingeLoss: 0.07431953974616409

Output\_hinge\_train.txt

iteration: 46 HingeLoss: 0.07384835329886798  
iteration: 47 HingeLoss: 0.07338015417723172  
iteration: 48 HingeLoss: 0.07291492344158801  
iteration: 49 HingeLoss: 0.07245264227234702  
iteration: 50 HingeLoss: 0.07199329196923528  
iteration: 51 HingeLoss: 0.0715368539505393  
iteration: 52 HingeLoss: 0.0710833097523537  
iteration: 53 HingeLoss: 0.07063264102783441  
iteration: 54 HingeLoss: 0.07018482954645663  
iteration: 55 HingeLoss: 0.06973985719327697  
iteration: 56 HingeLoss: 0.06929770596820116  
iteration: 57 HingeLoss: 0.06885835798525547  
iteration: 58 HingeLoss: 0.0684217954718635  
iteration: 59 HingeLoss: 0.06798800076812717  
iteration: 60 HingeLoss: 0.06755695632611212  
iteration: 61 HingeLoss: 0.06712864470913818  
iteration: 62 HingeLoss: 0.06670304859107373  
iteration: 63 HingeLoss: 0.06628015075563508  
iteration: 64 HingeLoss: 0.06585993409568987  
iteration: 65 HingeLoss: 0.06544238161256502  
iteration: 66 HingeLoss: 0.06502747641535932  
iteration: 67 HingeLoss: 0.0646152017202598  
iteration: 68 HingeLoss: 0.06420554084986314  
iteration: 69 HingeLoss: 0.06379847723250087  
iteration: 70 HingeLoss: 0.06339399440156894  
iteration: 71 HingeLoss: 0.06299207599486184  
iteration: 72 HingeLoss: 0.0625927057539104  
iteration: 73 HingeLoss: 0.06219586752332435  
iteration: 74 HingeLoss: 0.061801545250138715  
iteration: 75 HingeLoss: 0.06140972298316447  
iteration: 76 HingeLoss: 0.06102038487234325  
iteration: 77 HingeLoss: 0.060633515168106056  
iteration: 78 HingeLoss: 0.06024909822073643  
iteration: 79 HingeLoss: 0.059867118479737164  
iteration: 80 HingeLoss: 0.05948756049320132  
iteration: 81 HingeLoss: 0.05911040890718723  
iteration: 82 HingeLoss: 0.05873564846509724  
iteration: 83 HingeLoss: 0.05836326400706063  
iteration: 84 HingeLoss: 0.05799324046932055  
iteration: 85 HingeLoss: 0.057625562883624276  
iteration: 86 HingeLoss: 0.05726021637661799  
iteration: 87 HingeLoss: 0.056897186169245106  
iteration: 88 HingeLoss: 0.056536457576148336  
iteration: 89 HingeLoss: 0.05617801600507567  
iteration: 90 HingeLoss: 0.05582184695629003  
iteration: 91 HingeLoss: 0.055467936021982904  
iteration: 92 HingeLoss: 0.05511626888569123  
iteration: 93 HingeLoss: 0.054766831321718584  
iteration: 94 HingeLoss: 0.05441960919455954  
iteration: 95 HingeLoss: 0.05407458845832775  
iteration: 96 HingeLoss: 0.05373175515618806  
iteration: 97 HingeLoss: 0.05339109541979165

Output\_hinge\_train.txt

iteration: 98 HingeLoss: 0.05305259546871524  
iteration: 99 HingeLoss: 0.0527162416099034  
[-0.00214857 -0.00021613 -0.00038713 ... 0.00162779 0.00098532  
0.00014641]

CROSS VALIDATION 14

iteration: 0 HingeLoss: 20.847201043906438  
iteration: 1 HingeLoss: 0.08784682794979519  
iteration: 2 HingeLoss: 0.08728987839239387  
iteration: 3 HingeLoss: 0.08673645989942279  
iteration: 4 HingeLoss: 0.08618655008390678  
iteration: 5 HingeLoss: 0.08564012670080391  
iteration: 6 HingeLoss: 0.08509716764610628  
iteration: 7 HingeLoss: 0.0845576509559454  
iteration: 8 HingeLoss: 0.0840215548057039  
iteration: 9 HingeLoss: 0.08348885750913268  
iteration: 10 HingeLoss: 0.08295953751747373  
iteration: 11 HingeLoss: 0.08243357341858805  
iteration: 12 HingeLoss: 0.08191094393609002  
iteration: 13 HingeLoss: 0.08139162792848635  
iteration: 14 HingeLoss: 0.08087560438832107  
iteration: 15 HingeLoss: 0.0803628524413255  
iteration: 16 HingeLoss: 0.0798533513455741  
iteration: 17 HingeLoss: 0.07934708049064522  
iteration: 18 HingeLoss: 0.07884401939678755  
iteration: 19 HingeLoss: 0.07834414771409136  
iteration: 20 HingeLoss: 0.07784744522166573  
iteration: 21 HingeLoss: 0.07735389182682022  
iteration: 22 HingeLoss: 0.07686346756425216  
iteration: 23 HingeLoss: 0.0763761525952392  
iteration: 24 HingeLoss: 0.07589192720683646  
iteration: 25 HingeLoss: 0.07541077181107943  
iteration: 26 HingeLoss: 0.07493266694419139  
iteration: 27 HingeLoss: 0.07445759326579608  
iteration: 28 HingeLoss: 0.07398553155813538  
iteration: 29 HingeLoss: 0.07351646272529198  
iteration: 30 HingeLoss: 0.07305036779241673  
iteration: 31 HingeLoss: 0.07258722790496121  
iteration: 32 HingeLoss: 0.072127024327915  
iteration: 33 HingeLoss: 0.07166973844504777  
iteration: 34 HingeLoss: 0.07121535175815619  
iteration: 35 HingeLoss: 0.0707638458863158  
iteration: 36 HingeLoss: 0.07031520256513721  
iteration: 37 HingeLoss: 0.06986940364602744  
iteration: 38 HingeLoss: 0.06942643109545579  
iteration: 39 HingeLoss: 0.0689862669942242  
iteration: 40 HingeLoss: 0.06854889353674246  
iteration: 41 HingeLoss: 0.068114293030308  
iteration: 42 HingeLoss: 0.06768244789439011  
iteration: 43 HingeLoss: 0.06725334065991873  
iteration: 44 HingeLoss: 0.06682695396857785  
iteration: 45 HingeLoss: 0.06640327057210335  
iteration: 46 HingeLoss: 0.06598227333158525

# Output\_hinge\_train.txt

```

iteration: 47 HingeLoss: 0.06556394521677424
iteration: 48 HingeLoss: 0.06514826930539318
iteration: 49 HingeLoss: 0.06473522878245204
iteration: 50 HingeLoss: 0.06432480693956813
iteration: 51 HingeLoss: 0.06391698717428991
iteration: 52 HingeLoss: 0.06351175298942564
iteration: 53 HingeLoss: 0.0631090879923758
iteration: 54 HingeLoss: 0.06270897589447003
iteration: 55 HingeLoss: 0.06231140051030847
iteration: 56 HingeLoss: 0.06191634575710661
iteration: 57 HingeLoss: 0.06152379565404495
iteration: 58 HingeLoss: 0.06113373432162264
iteration: 59 HingeLoss: 0.06074614598101483
iteration: 60 HingeLoss: 0.06036101495343465
iteration: 61 HingeLoss: 0.0599783256594988
iteration: 62 HingeLoss: 0.05959806261859736
iteration: 63 HingeLoss: 0.05922021044826775
iteration: 64 HingeLoss: 0.058844753863572075
iteration: 65 HingeLoss: 0.05847167767647928
iteration: 66 HingeLoss: 0.0581009667952504
iteration: 67 HingeLoss: 0.05773260622382828
iteration: 68 HingeLoss: 0.05736658106123093
iteration: 69 HingeLoss: 0.05700287650094855
iteration: 70 HingeLoss: 0.05664147783034486
iteration: 71 HingeLoss: 0.05628237043006178
iteration: 72 HingeLoss: 0.05592553977342797
iteration: 73 HingeLoss: 0.05557097142587144
iteration: 74 HingeLoss: 0.05521865104433539
iteration: 75 HingeLoss: 0.0548685643766982
iteration: 76 HingeLoss: 0.05452069726119672
iteration: 77 HingeLoss: 0.05417503562585356
iteration: 78 HingeLoss: 0.05383156548790774
iteration: 79 HingeLoss: 0.053490272953249034
iteration: 80 HingeLoss: 0.053151144215856094
iteration: 81 HingeLoss: 0.05281416555723776
iteration: 82 HingeLoss: 0.05247932334587828
iteration: 83 HingeLoss: 0.052146604036685744
iteration: 84 HingeLoss: 0.05181599417044436
iteration: 85 HingeLoss: 0.05148748037326964
iteration: 86 HingeLoss: 0.051161049356067835
iteration: 87 HingeLoss: 0.05083668791399807
iteration: 88 HingeLoss: 0.05051438292593823
iteration: 89 HingeLoss: 0.050194121353954325
iteration: 90 HingeLoss: 0.049875890242772815
iteration: 91 HingeLoss: 0.04955967671925678
iteration: 92 HingeLoss: 0.04924546799188508
iteration: 93 HingeLoss: 0.048933251350234956
iteration: 94 HingeLoss: 0.048623014164467744
iteration: 95 HingeLoss: 0.048314743884818045
iteration: 96 HingeLoss: 0.04800842804108622
iteration: 97 HingeLoss: 0.04770405424213358
iteration: 98 HingeLoss: 0.04740161017538149

```

Output\_hinge\_train.txt

iteration: 99 HingeLoss: 0.04710108360631313  
[-1.95778660e-03 -2.54399435e-04 -3.64684905e-04 ... 1.20537471e-03  
5.73510801e-04 -3.63272671e-07]

CROSS VALIDATION 15

iteration: 0 HingeLoss: 20.847201043906438  
iteration: 1 HingeLoss: 1.3969233827263374  
iteration: 2 HingeLoss: 0.7576328358901844  
iteration: 3 HingeLoss: 0.097077319783124  
iteration: 4 HingeLoss: 0.09646184883728837  
iteration: 5 HingeLoss: 0.09585027998193087  
iteration: 6 HingeLoss: 0.09524258847776819  
iteration: 7 HingeLoss: 0.09463874974236423  
iteration: 8 HingeLoss: 0.09403873934913583  
iteration: 9 HingeLoss: 0.09344253302636436  
iteration: 10 HingeLoss: 0.0928501066562143  
iteration: 11 HingeLoss: 0.09226143627375726  
iteration: 12 HingeLoss: 0.09167649806600263  
iteration: 13 HingeLoss: 0.09109526837093447  
iteration: 14 HingeLoss: 0.09051772367655413  
iteration: 15 HingeLoss: 0.08994384061992915  
iteration: 16 HingeLoss: 0.08937359598624843  
iteration: 17 HingeLoss: 0.0888069667078827  
iteration: 18 HingeLoss: 0.08824392986345186  
iteration: 19 HingeLoss: 0.08768446267689739  
iteration: 20 HingeLoss: 0.08712854251656119  
iteration: 21 HingeLoss: 0.08657614689427018  
iteration: 22 HingeLoss: 0.0860272534644262  
iteration: 23 HingeLoss: 0.08548184002310251  
iteration: 24 HingeLoss: 0.08493988450714547  
iteration: 25 HingeLoss: 0.084401364993282  
iteration: 26 HingeLoss: 0.08386625969723258  
iteration: 27 HingeLoss: 0.08333454697283031  
iteration: 28 HingeLoss: 0.0828062053111452  
iteration: 29 HingeLoss: 0.08228121333961398  
iteration: 30 HingeLoss: 0.0817595498211756  
iteration: 31 HingeLoss: 0.0812411936534121  
iteration: 32 HingeLoss: 0.08072612386769497  
iteration: 33 HingeLoss: 0.08021431962833721  
iteration: 34 HingeLoss: 0.07970576023174993  
iteration: 35 HingeLoss: 0.07920042510560536  
iteration: 36 HingeLoss: 0.07869829380800433  
iteration: 37 HingeLoss: 0.07819934602664952  
iteration: 38 HingeLoss: 0.07770356157802367  
iteration: 39 HingeLoss: 0.07721092040657329  
iteration: 40 HingeLoss: 0.07672140258389713  
iteration: 41 HingeLoss: 0.0762349883079402  
iteration: 42 HingeLoss: 0.07575165790219268  
iteration: 43 HingeLoss: 0.07527139181489408  
iteration: 44 HingeLoss: 0.07479417061824202  
iteration: 45 HingeLoss: 0.07431997500760666  
iteration: 46 HingeLoss: 0.07384878580074968  
iteration: 47 HingeLoss: 0.07338058393704826

Output\_hinge\_train.txt

iteration: 48 HingeLoss: 0.07291535047672401  
iteration: 49 HingeLoss: 0.07245306660007698  
iteration: 50 HingeLoss: 0.07199371360672421  
iteration: 51 HingeLoss: 0.07153727291484335  
iteration: 52 HingeLoss: 0.07108372606042088  
iteration: 53 HingeLoss: 0.0706330546965053  
iteration: 54 HingeLoss: 0.07018524059246498  
iteration: 55 HingeLoss: 0.0697402656332505  
iteration: 56 HingeLoss: 0.0692981118186621  
iteration: 57 HingeLoss: 0.06885876126262146  
iteration: 58 HingeLoss: 0.06842219619244791  
iteration: 59 HingeLoss: 0.06798839894814004  
iteration: 60 HingeLoss: 0.06755735198166068  
iteration: 61 HingeLoss: 0.0671290378562275  
iteration: 62 HingeLoss: 0.06670343924560752  
iteration: 63 HingeLoss: 0.06628053893341619  
iteration: 64 HingeLoss: 0.06586031981242091  
iteration: 65 HingeLoss: 0.06544276488384905  
iteration: 66 HingeLoss: 0.06502785725670046  
iteration: 67 HingeLoss: 0.06461558014706399  
iteration: 68 HingeLoss: 0.0642059168774385  
iteration: 69 HingeLoss: 0.06379885087605851  
iteration: 70 HingeLoss: 0.06339436567622363  
iteration: 71 HingeLoss: 0.06299244491563236  
iteration: 72 HingeLoss: 0.06259307233572044  
iteration: 73 HingeLoss: 0.062196231781002906  
iteration: 74 HingeLoss: 0.06180190719842088  
iteration: 75 HingeLoss: 0.06141008263669175  
iteration: 76 HingeLoss: 0.06102074224566442  
iteration: 77 HingeLoss: 0.060633870275677654  
iteration: 78 HingeLoss: 0.06024945107692334  
iteration: 79 HingeLoss: 0.05986746909881313  
iteration: 80 HingeLoss: 0.059487908889349704  
iteration: 81 HingeLoss: 0.059110755094501394  
iteration: 82 HingeLoss: 0.05873599245758115  
iteration: 83 HingeLoss: 0.058363605818629614  
iteration: 84 HingeLoss: 0.05799358011380155  
iteration: 85 HingeLoss: 0.057625900374756636  
iteration: 86 HingeLoss: 0.05726055172805406  
iteration: 87 HingeLoss: 0.056897519394550525  
iteration: 88 HingeLoss: 0.05653678868880278  
iteration: 89 HingeLoss: 0.05617834501847335  
iteration: 90 HingeLoss: 0.0558221738837403  
iteration: 91 HingeLoss: 0.05546826087671063  
iteration: 92 HingeLoss: 0.055116591680837546  
iteration: 93 HingeLoss: 0.05476715207034121  
iteration: 94 HingeLoss: 0.05441992790963345  
iteration: 95 HingeLoss: 0.05407490515274568  
iteration: 96 HingeLoss: 0.053732069842760966  
iteration: 97 HingeLoss: 0.053391408111249296  
iteration: 98 HingeLoss: 0.05305290617770665  
iteration: 99 HingeLoss: 0.05271655034899743

Output\_hinge\_train.txt

[-0.0021486 -0.00021614 -0.00038714 ... 0.00162781 0.00098534  
0.00014641]

CROSS VALIDATION 16

iteration: 0 HingeLoss: 20.847201043906438  
iteration: 1 HingeLoss: 0.08337550189709272  
iteration: 2 HingeLoss: 0.08284690058087626  
iteration: 3 HingeLoss: 0.08232165060102538  
iteration: 4 HingeLoss: 0.08179973071004208  
iteration: 5 HingeLoss: 0.08128111979513748  
iteration: 6 HingeLoss: 0.08076579687737818  
iteration: 7 HingeLoss: 0.08025374111083723  
iteration: 8 HingeLoss: 0.07974493178175107  
iteration: 9 HingeLoss: 0.07923934830768153  
iteration: 10 HingeLoss: 0.07873697023668327  
iteration: 11 HingeLoss: 0.07823777724647642  
iteration: 12 HingeLoss: 0.07774174914362457  
iteration: 13 HingeLoss: 0.07724886586271781  
iteration: 14 HingeLoss: 0.07675910746556108  
iteration: 15 HingeLoss: 0.07627245414036758  
iteration: 16 HingeLoss: 0.07578888620095751  
iteration: 17 HingeLoss: 0.07530838408596155  
iteration: 18 HingeLoss: 0.07483092835802953  
iteration: 19 HingeLoss: 0.07435649970304437  
iteration: 20 HingeLoss: 0.07388507892934047  
iteration: 21 HingeLoss: 0.0734166469669277  
iteration: 22 HingeLoss: 0.07295118486671974  
iteration: 23 HingeLoss: 0.07248867379976752  
iteration: 24 HingeLoss: 0.0720290950564979  
iteration: 25 HingeLoss: 0.07157243004595633  
iteration: 26 HingeLoss: 0.07111866029505522  
iteration: 27 HingeLoss: 0.07066776744782632  
iteration: 28 HingeLoss: 0.07021973326467859  
iteration: 29 HingeLoss: 0.0697745396216599  
iteration: 30 HingeLoss: 0.0693321685097243  
iteration: 31 HingeLoss: 0.06889260203400326  
iteration: 32 HingeLoss: 0.06845582241308178  
iteration: 33 HingeLoss: 0.06802181197827926  
iteration: 34 HingeLoss: 0.06759055317293468  
iteration: 35 HingeLoss: 0.0671620285516963  
iteration: 36 HingeLoss: 0.06673622077981613  
iteration: 37 HingeLoss: 0.06631311263244853  
iteration: 38 HingeLoss: 0.06589268699395359  
iteration: 39 HingeLoss: 0.06547492685720464  
iteration: 40 HingeLoss: 0.06505981532290032  
iteration: 41 HingeLoss: 0.06464733559888104  
iteration: 42 HingeLoss: 0.0642374709994495  
iteration: 43 HingeLoss: 0.06383020494469599  
iteration: 44 HingeLoss: 0.06342552095982741  
iteration: 45 HingeLoss: 0.06302340267450113  
iteration: 46 HingeLoss: 0.06262383382216245  
iteration: 47 HingeLoss: 0.06222679823938694  
iteration: 48 HingeLoss: 0.061832279865226214



# Output\_hinge\_train.txt

```

iteration: 49 HingeLoss: 0.061440262740558554
iteration: 50 HingeLoss: 0.06105073100744311
iteration: 51 HingeLoss: 0.06066366890847859
iteration: 52 HingeLoss: 0.06027906078616563
iteration: 53 HingeLoss: 0.05989689108227366
iteration: 54 HingeLoss: 0.05951714433721127
iteration: 55 HingeLoss: 0.0591398051894011
iteration: 56 HingeLoss: 0.05876485837465827
iteration: 57 HingeLoss: 0.05839228872557287
iteration: 58 HingeLoss: 0.058022081170896626
iteration: 59 HingeLoss: 0.057654220734932954
iteration: 60 HingeLoss: 0.05728869253693144
iteration: 61 HingeLoss: 0.05692548179048558
iteration: 62 HingeLoss: 0.056564573802934955
iteration: 63 HingeLoss: 0.05620595397477053
iteration: 64 HingeLoss: 0.05584960779904456
iteration: 65 HingeLoss: 0.05549552086078318
iteration: 66 HingeLoss: 0.05514367883640371
iteration: 67 HingeLoss: 0.05479406749313508
iteration: 68 HingeLoss: 0.054446672688442034
iteration: 69 HingeLoss: 0.054101480369453205
iteration: 70 HingeLoss: 0.053758476572392425
iteration: 71 HingeLoss: 0.05341764742201401
iteration: 72 HingeLoss: 0.05307897913104153
iteration: 73 HingeLoss: 0.05274245799960987
iteration: 74 HingeLoss: 0.052408070414711176
iteration: 75 HingeLoss: 0.05207580284964425
iteration: 76 HingeLoss: 0.05174564186346723
iteration: 77 HingeLoss: 0.05141757410045389
iteration: 78 HingeLoss: 0.05109158628955348
iteration: 79 HingeLoss: 0.05076766524385374
iteration: 80 HingeLoss: 0.050445797860047666
iteration: 81 HingeLoss: 0.050125971117903186
iteration: 82 HingeLoss: 0.04980817207973659
iteration: 83 HingeLoss: 0.04949238788988932
iteration: 84 HingeLoss: 0.049178605774207663
iteration: 85 HingeLoss: 0.048866813039526176
iteration: 86 HingeLoss: 0.04855699707315421
iteration: 87 HingeLoss: 0.048249145342365615
iteration: 88 HingeLoss: 0.047943245393891866
iteration: 89 HingeLoss: 0.047639284853418264
iteration: 90 HingeLoss: 0.0473372514250833
iteration: 91 HingeLoss: 0.047037132890981374
iteration: 92 HingeLoss: 0.046738917110668514
iteration: 93 HingeLoss: 0.04644259202067114
iteration: 94 HingeLoss: 0.046148145633998335
iteration: 95 HingeLoss: 0.04585556603965673
iteration: 96 HingeLoss: 0.04556484140216873
iteration: 97 HingeLoss: 0.045275959961093785
iteration: 98 HingeLoss: 0.04498891003055259
iteration: 99 HingeLoss: 0.04470367999875444
[-1.65457163e-03 -2.36714617e-04 -2.68221464e-04 ... 1.19454000e-03

```

5.76643535e-04 7.26981702e-05]

## CROSS VALIDATION 17

iteration: 0 HingeLoss: 20.847201043906438  
iteration: 1 HingeLoss: 1.3971108540835695  
iteration: 2 HingeLoss: 0.7579221415253645  
iteration: 3 HingeLoss: 0.09707783943116782  
iteration: 4 HingeLoss: 0.09646236519075961  
iteration: 5 HingeLoss: 0.09585079306171716  
iteration: 6 HingeLoss: 0.09524309830462474  
iteration: 7 HingeLoss: 0.09463925633691464  
iteration: 8 HingeLoss: 0.09403924273187293  
iteration: 9 HingeLoss: 0.0934430332176511  
iteration: 10 HingeLoss: 0.09285060367628446  
iteration: 11 HingeLoss: 0.09226193014271633  
iteration: 12 HingeLoss: 0.09167698880382881  
iteration: 13 HingeLoss: 0.09109575599747907  
iteration: 14 HingeLoss: 0.0905182082115427  
iteration: 15 HingeLoss: 0.08994432208296228  
iteration: 16 HingeLoss: 0.08937407439680219  
iteration: 17 HingeLoss: 0.08880744208530997  
iteration: 18 HingeLoss: 0.08824440222698261  
iteration: 19 HingeLoss: 0.08768493204563979  
iteration: 20 HingeLoss: 0.08712900890950226  
iteration: 21 HingeLoss: 0.08657661033027637  
iteration: 22 HingeLoss: 0.08602771396224462  
iteration: 23 HingeLoss: 0.08548229760136124  
iteration: 24 HingeLoss: 0.08494033918435459  
iteration: 25 HingeLoss: 0.08440181678783411  
iteration: 26 HingeLoss: 0.08386670862740382  
iteration: 27 HingeLoss: 0.08333499305678078  
iteration: 28 HingeLoss: 0.08280664856692008  
iteration: 29 HingeLoss: 0.08228165378514386  
iteration: 30 HingeLoss: 0.08175998747427744  
iteration: 31 HingeLoss: 0.08124162853178991  
iteration: 32 HingeLoss: 0.08072655598894063  
iteration: 33 HingeLoss: 0.08021474900993089  
iteration: 34 HingeLoss: 0.07970618689106103  
iteration: 35 HingeLoss: 0.07920084905989319  
iteration: 36 HingeLoss: 0.07869871507441877  
iteration: 37 HingeLoss: 0.07819976462223165  
iteration: 38 HingeLoss: 0.07770397751970663  
iteration: 39 HingeLoss: 0.07721133371118281  
iteration: 40 HingeLoss: 0.07672181326815229  
iteration: 41 HingeLoss: 0.07623539638845407  
iteration: 42 HingeLoss: 0.075752063395473  
iteration: 43 HingeLoss: 0.0752717947373439  
iteration: 44 HingeLoss: 0.07479457098616042  
iteration: 45 HingeLoss: 0.07432037283718948  
iteration: 46 HingeLoss: 0.0738491811080899  
iteration: 47 HingeLoss: 0.07338097673813694  
iteration: 48 HingeLoss: 0.07291574078745078  
iteration: 49 HingeLoss: 0.07245345443623079

# Output\_hinge\_train.txt

```

iteration: 50 HingeLoss: 0.07199409898399382
iteration: 51 HingeLoss: 0.07153765584881815
iteration: 52 HingeLoss: 0.07108410656659137
iteration: 53 HingeLoss: 0.07063343279026377
iteration: 54 HingeLoss: 0.07018561628910615
iteration: 55 HingeLoss: 0.06974063894797213
iteration: 56 HingeLoss: 0.06929848276656556
iteration: 57 HingeLoss: 0.06885912985871234
iteration: 58 HingeLoss: 0.06842256245163682
iteration: 59 HingeLoss: 0.06798876288524285
iteration: 60 HingeLoss: 0.06755771361139949
iteration: 61 HingeLoss: 0.06712939719323105
iteration: 62 HingeLoss: 0.06670379630441176
iteration: 63 HingeLoss: 0.06628089372846488
iteration: 64 HingeLoss: 0.06586067235806627
iteration: 65 HingeLoss: 0.06544311519435234
iteration: 66 HingeLoss: 0.06502820534623249
iteration: 67 HingeLoss: 0.06461592602970571
iteration: 68 HingeLoss: 0.06420626056718164
iteration: 69 HingeLoss: 0.06379919238680609
iteration: 70 HingeLoss: 0.06339470502179045
iteration: 71 HingeLoss: 0.06299278210974572
iteration: 72 HingeLoss: 0.06259340739202054
iteration: 73 HingeLoss: 0.06219656471304358
iteration: 74 HingeLoss: 0.06180223801966979
iteration: 75 HingeLoss: 0.06141041136053148
iteration: 76 HingeLoss: 0.06102106888539251
iteration: 77 HingeLoss: 0.06063419484450738
iteration: 78 HingeLoss: 0.0602497735879842
iteration: 79 HingeLoss: 0.05986778956515144
iteration: 80 HingeLoss: 0.05948822732392899
iteration: 81 HingeLoss: 0.05911107151020299
iteration: 82 HingeLoss: 0.05873630686720481
iteration: 83 HingeLoss: 0.05836391823489388
iteration: 84 HingeLoss: 0.057993890549344326
iteration: 85 HingeLoss: 0.05762620884213572
iteration: 86 HingeLoss: 0.057260858239747595
iteration: 87 HingeLoss: 0.0568978239629576
iteration: 88 HingeLoss: 0.056537091326243856
iteration: 89 HingeLoss: 0.05617864573719073
iteration: 90 HingeLoss: 0.05582247269589872
iteration: 91 HingeLoss: 0.055468557794397674
iteration: 92 HingeLoss: 0.0551168867160642
iteration: 93 HingeLoss: 0.054767445235042296
iteration: 94 HingeLoss: 0.054420219215668086
iteration: 95 HingeLoss: 0.05407519461189785
iteration: 96 HingeLoss: 0.053732357466739905
iteration: 97 HingeLoss: 0.05339169391169004
iteration: 98 HingeLoss: 0.053053190166170425
iteration: 99 HingeLoss: 0.052716832536972166
[-0.00214862 -0.00021614 -0.00038714 ... 0.00162781 0.00098534
0.00014641]

```

## CROSS VALIDATION 18

iteration: 0 HingeLoss: 24.241695750869972  
iteration: 1 HingeLoss: 15.143619398458972  
iteration: 2 HingeLoss: 0.10196303967568884  
iteration: 3 HingeLoss: 0.10131659322857162  
iteration: 4 HingeLoss: 0.1006742452568461  
iteration: 5 HingeLoss: 0.10003596977614741  
iteration: 6 HingeLoss: 0.09940174096685125  
iteration: 7 HingeLoss: 0.09877153317303028  
iteration: 8 HingeLoss: 0.09814532090141576  
iteration: 9 HingeLoss: 0.0975230788203665  
iteration: 10 HingeLoss: 0.09690478175884412  
iteration: 11 HingeLoss: 0.0962904047053948  
iteration: 12 HingeLoss: 0.0956799228071376  
iteration: 13 HingeLoss: 0.09507331136875892  
iteration: 14 HingeLoss: 0.09447054585151361  
iteration: 15 HingeLoss: 0.09387160187223263  
iteration: 16 HingeLoss: 0.09327645520233613  
iteration: 17 HingeLoss: 0.09268508176685364  
iteration: 18 HingeLoss: 0.09209745764345036  
iteration: 19 HingeLoss: 0.09151355906145918  
iteration: 20 HingeLoss: 0.09093336240091923  
iteration: 21 HingeLoss: 0.0903568441916202  
iteration: 22 HingeLoss: 0.08978398111215354  
iteration: 23 HingeLoss: 0.08921474998896806  
iteration: 24 HingeLoss: 0.08864912779543335  
iteration: 25 HingeLoss: 0.088087091650908  
iteration: 26 HingeLoss: 0.08752861881981407  
iteration: 27 HingeLoss: 0.08697368671071726  
iteration: 28 HingeLoss: 0.08642227287541314  
iteration: 29 HingeLoss: 0.08587435500801907  
iteration: 30 HingeLoss: 0.08532991094407207  
iteration: 31 HingeLoss: 0.08478891865963172  
iteration: 32 HingeLoss: 0.08425135627038974  
iteration: 33 HingeLoss: 0.08371720203078452  
iteration: 34 HingeLoss: 0.08318643433312135  
iteration: 35 HingeLoss: 0.08265903170669858  
iteration: 36 HingeLoss: 0.082134972816939  
iteration: 37 HingeLoss: 0.08161423646452672  
iteration: 38 HingeLoss: 0.08109680158454974  
iteration: 39 HingeLoss: 0.08058264724564751  
iteration: 40 HingeLoss: 0.08007175264916487  
iteration: 41 HingeLoss: 0.07956409712830996  
iteration: 42 HingeLoss: 0.07905966014731877  
iteration: 43 HingeLoss: 0.078558421300624  
iteration: 44 HingeLoss: 0.07806036031202986  
iteration: 45 HingeLoss: 0.07756545703389194  
iteration: 46 HingeLoss: 0.07707369144630181  
iteration: 47 HingeLoss: 0.07658504365627755  
iteration: 48 HingeLoss: 0.07609949389695897  
iteration: 49 HingeLoss: 0.07561702252680773  
iteration: 50 HingeLoss: 0.07513761002881307

# Output\_hinge\_train.txt

```

iteration: 51 HingeLoss: 0.07466123700970244
iteration: 52 HingeLoss: 0.07418788419915634
iteration: 53 HingeLoss: 0.0737175324490297
iteration: 54 HingeLoss: 0.07325016273257651
iteration: 55 HingeLoss: 0.07278575614368064
iteration: 56 HingeLoss: 0.07232429389609088
iteration: 57 HingeLoss: 0.07186575732266089
iteration: 58 HingeLoss: 0.07141012787459428
iteration: 59 HingeLoss: 0.07095738712069413
iteration: 60 HingeLoss: 0.07050751674661739
iteration: 61 HingeLoss: 0.07006049855413421
iteration: 62 HingeLoss: 0.06961631446039161
iteration: 63 HingeLoss: 0.06917494649718198
iteration: 64 HingeLoss: 0.06873637681021631
iteration: 65 HingeLoss: 0.06830058765840201
iteration: 66 HingeLoss: 0.06786756141312494
iteration: 67 HingeLoss: 0.06743728055753671
iteration: 68 HingeLoss: 0.06700972768584582
iteration: 69 HingeLoss: 0.0665848855026136
iteration: 70 HingeLoss: 0.0661627368220546
iteration: 71 HingeLoss: 0.06574326456734135
iteration: 72 HingeLoss: 0.06532645176991371
iteration: 73 HingeLoss: 0.06491228156879218
iteration: 74 HingeLoss: 0.06450073720989614
iteration: 75 HingeLoss: 0.0640918020453659
iteration: 76 HingeLoss: 0.06368545953288925
iteration: 77 HingeLoss: 0.06328169323503254
iteration: 78 HingeLoss: 0.06288048681857546
iteration: 79 HingeLoss: 0.06248182405385045
iteration: 80 HingeLoss: 0.0620856888140862
iteration: 81 HingeLoss: 0.06169206507475522
iteration: 82 HingeLoss: 0.06130093691292567
iteration: 83 HingeLoss: 0.060912288506617195
iteration: 84 HingeLoss: 0.06052610413416099
iteration: 85 HingeLoss: 0.06014236817356357
iteration: 86 HingeLoss: 0.05976106510187522
iteration: 87 HingeLoss: 0.05938217949456173
iteration: 88 HingeLoss: 0.05900569602488054
iteration: 89 HingeLoss: 0.058631599463260846
iteration: 90 HingeLoss: 0.05825987467668736
iteration: 91 HingeLoss: 0.05789050662808823
iteration: 92 HingeLoss: 0.05752348037572679
iteration: 93 HingeLoss: 0.057158781072597066
iteration: 94 HingeLoss: 0.05679639396582325
iteration: 95 HingeLoss: 0.05643630439606289
iteration: 96 HingeLoss: 0.056078497796913755
iteration: 97 HingeLoss: 0.05572295969432482
iteration: 98 HingeLoss: 0.0553696757060107
iteration: 99 HingeLoss: 0.055018631540869736
[-0.0028628 -0.00046027 -0.00168312 ... 0.0019753 0.00096203
0.00014565]

```

CROSS VALIDATION 19

Output\_hinge\_train.txt

iteration: 0 HingeLoss: 30.290554200356453  
iteration: 1 HingeLoss: 13.786371921234661  
iteration: 2 HingeLoss: 0.0830060878818726  
iteration: 3 HingeLoss: 0.08247982865332254  
iteration: 4 HingeLoss: 0.08195690591228448  
iteration: 5 HingeLoss: 0.08143729850540214  
iteration: 6 HingeLoss: 0.0809209854134318  
iteration: 7 HingeLoss: 0.08040794575039187  
iteration: 8 HingeLoss: 0.07989815876271797  
iteration: 9 HingeLoss: 0.07939160382842358  
iteration: 10 HingeLoss: 0.07888826045626568  
iteration: 11 HingeLoss: 0.07838810828491595  
iteration: 12 HingeLoss: 0.0778911270821369  
iteration: 13 HingeLoss: 0.07739729674396371  
iteration: 14 HingeLoss: 0.07690659729389084  
iteration: 15 HingeLoss: 0.07641900888206386  
iteration: 16 HingeLoss: 0.0759345117844767  
iteration: 17 HingeLoss: 0.07545308640217352  
iteration: 18 HingeLoss: 0.07497471326045606  
iteration: 19 HingeLoss: 0.07449937300809582  
iteration: 20 HingeLoss: 0.07402704641655114  
iteration: 21 HingeLoss: 0.07355771437918963  
iteration: 22 HingeLoss: 0.07309135791051485  
iteration: 23 HingeLoss: 0.07262795814539887  
iteration: 24 HingeLoss: 0.07216749633831843  
iteration: 25 HingeLoss: 0.07170995386259738  
iteration: 26 HingeLoss: 0.07125531220965266  
iteration: 27 HingeLoss: 0.07080355298824581  
iteration: 28 HingeLoss: 0.07035465792373896  
iteration: 29 HingeLoss: 0.06990860885735554  
iteration: 30 HingeLoss: 0.06946538774544588  
iteration: 31 HingeLoss: 0.06902497665875702  
iteration: 32 HingeLoss: 0.06858735778170766  
iteration: 33 HingeLoss: 0.06815251341166761  
iteration: 34 HingeLoss: 0.06772042595824114  
iteration: 35 HingeLoss: 0.06729107794255605  
iteration: 36 HingeLoss: 0.06686445199655623  
iteration: 37 HingeLoss: 0.06644053086229913  
iteration: 38 HingeLoss: 0.06601929739125774  
iteration: 39 HingeLoss: 0.0656007345436268  
iteration: 40 HingeLoss: 0.06518482538763364  
iteration: 41 HingeLoss: 0.06477155309885305  
iteration: 42 HingeLoss: 0.06436090095952687  
iteration: 43 HingeLoss: 0.06395285235788761  
iteration: 44 HingeLoss: 0.06354739078748649  
iteration: 45 HingeLoss: 0.06314449984652583  
iteration: 46 HingeLoss: 0.06274416323719545  
iteration: 47 HingeLoss: 0.062346364765013325  
iteration: 48 HingeLoss: 0.06195108833817067  
iteration: 49 HingeLoss: 0.061558317966880806  
iteration: 50 HingeLoss: 0.06116803776273252  
iteration: 51 HingeLoss: 0.06078023193804717

# Output\_hinge\_train.txt

```

iteration: 52 HingeLoss: 0.06039488480524014
iteration: 53 HingeLoss: 0.060011980776186205
iteration: 54 HingeLoss: 0.059631504361589024
iteration: 55 HingeLoss: 0.05925344017035441
iteration: 56 HingeLoss: 0.058877772908967965
iteration: 57 HingeLoss: 0.0585044873808762
iteration: 58 HingeLoss: 0.058133568485871895
iteration: 59 HingeLoss: 0.05776500121948325
iteration: 60 HingeLoss: 0.057398770672367004
iteration: 61 HingeLoss: 0.057034862029705216
iteration: 62 HingeLoss: 0.05667326057060592
iteration: 63 HingeLoss: 0.05631395166750779
iteration: 64 HingeLoss: 0.055956920785588365
iteration: 65 HingeLoss: 0.05560215348217604
iteration: 66 HingeLoss: 0.05524963540616588
iteration: 67 HingeLoss: 0.05489935229743895
iteration: 68 HingeLoss: 0.05455128998628581
iteration: 69 HingeLoss: 0.05420543439283288
iteration: 70 HingeLoss: 0.053861771526473146
iteration: 71 HingeLoss: 0.05352028748530018
iteration: 72 HingeLoss: 0.053180968455545714
iteration: 73 HingeLoss: 0.05284380071102091
iteration: 74 HingeLoss: 0.05250877061256105
iteration: 75 HingeLoss: 0.05217586460747378
iteration: 76 HingeLoss: 0.05184506922899101
iteration: 77 HingeLoss: 0.05151637109572394
iteration: 78 HingeLoss: 0.05118975691112203
iteration: 79 HingeLoss: 0.05086521346293484
iteration: 80 HingeLoss: 0.0505427276226778
iteration: 81 HingeLoss: 0.05022228634510096
iteration: 82 HingeLoss: 0.049903876667661315
iteration: 83 HingeLoss: 0.04958748570999865
iteration: 84 HingeLoss: 0.04927310067341412
iteration: 85 HingeLoss: 0.0489607088403529
iteration: 86 HingeLoss: 0.0486502975738895
iteration: 87 HingeLoss: 0.048341854317216514
iteration: 88 HingeLoss: 0.04803536659313708
iteration: 89 HingeLoss: 0.04773082200355953
iteration: 90 HingeLoss: 0.047428208228996384
iteration: 91 HingeLoss: 0.04712751302806583
iteration: 92 HingeLoss: 0.04682872423699635
iteration: 93 HingeLoss: 0.046531829769134926
iteration: 94 HingeLoss: 0.04623681761445812
iteration: 95 HingeLoss: 0.0459436758390859
iteration: 96 HingeLoss: 0.045652392584799334
iteration: 97 HingeLoss: 0.04536295606856055
iteration: 98 HingeLoss: 0.0450753545820363
iteration: 99 HingeLoss: 0.044789576491124215
[-0.0015467 -0.00045039 -0.00117274 ... 0.0007986 0.00027718
0.00014555]
Accuracy (Hinge Loss): 0.7
eta = 0.0001 lambda = 0.1

```

Output\_hinge\_train.txt

CROSS VALIDATION 0

iteration: 0 HingeLoss: 24.65841291061827  
iteration: 1 HingeLoss: 0.029006380026033098  
iteration: 2 HingeLoss: 0.028944951023835604

Convergence reached in 2 iterations

[-2.05403283e-03 1.56897861e-04 2.31077276e-04 ... 6.32107604e-04  
8.36270791e-04 -9.98481317e-05]

CROSS VALIDATION 1

iteration: 0 HingeLoss: 14.68262611717833  
iteration: 1 HingeLoss: 0.27850051254706765  
iteration: 2 HingeLoss: 0.03113875364136733  
iteration: 3 HingeLoss: 0.031072808750479665

Convergence reached in 3 iterations

[-0.00237463 -0.00032083 -0.00053783 ... 0.00124354 0.00112943  
0.00029897]

CROSS VALIDATION 2

iteration: 0 HingeLoss: 10.371468391381342  
iteration: 1 HingeLoss: 2.3961586348076724  
iteration: 2 HingeLoss: 0.031243040198927038  
iteration: 3 HingeLoss: 0.031176874452518346

Convergence reached in 3 iterations

[-2.00406289e-03 -8.34363503e-04 -8.68441222e-04 ... 2.11780987e-03  
9.43484708e-04 9.96646512e-05]

CROSS VALIDATION 3

iteration: 0 HingeLoss: 20.78800901043687  
iteration: 1 HingeLoss: 1.32704784141484  
iteration: 2 HingeLoss: 0.6564013813685351  
iteration: 3 HingeLoss: 0.03280151189594956  
iteration: 4 HingeLoss: 0.03273204565629715

Convergence reached in 4 iterations

[-0.00293236 -0.00029478 -0.00052927 ... 0.00221909 0.00134439  
0.00019935]

CROSS VALIDATION 4

iteration: 0 HingeLoss: 20.78800901043687  
iteration: 1 HingeLoss: 1.32704784141484  
iteration: 2 HingeLoss: 0.6564013813685351  
iteration: 3 HingeLoss: 0.03280151189594956  
iteration: 4 HingeLoss: 0.03273204565629715

Convergence reached in 4 iterations

[-0.00293236 -0.00029478 -0.00052927 ... 0.00221909 0.00134439  
0.00019935]

CROSS VALIDATION 5

iteration: 0 HingeLoss: 9.64306726613616  
iteration: 1 HingeLoss: 0.030071343400169526  
iteration: 2 HingeLoss: 0.030007659044584568

Convergence reached in 2 iterations

[-0.00101054 0.00081658 -0.00096141 ... 0.00020295 0.00026991  
0.00059833]

CROSS VALIDATION 6

iteration: 0 HingeLoss: 20.787753424516783  
iteration: 1 HingeLoss: 1.32703137292041  
iteration: 2 HingeLoss: 0.03100669320296197



Output\_hinge\_train.txt

```
iteration: 3 HingeLoss: 0.030941027986440897
Convergence reached in 3 iterations
[-3.30863093e-03 -6.53472455e-04 -7.76940036e-04 ... 2.07561653e-03
 1.21386147e-03 9.96487365e-05]
CROSS VALIDATION 7
iteration: 0 HingeLoss: 20.787753424516783
iteration: 1 HingeLoss: 1.32703137292041
iteration: 2 HingeLoss: 0.6563509806192931
iteration: 3 HingeLoss: 0.03280164156497759
iteration: 4 HingeLoss: 0.03273217505071528
Convergence reached in 4 iterations
[-0.00293236 -0.00029477 -0.00052926 ... 0.00221911 0.00134441
 0.00019935]
CROSS VALIDATION 8
iteration: 0 HingeLoss: 23.64301417099436
iteration: 1 HingeLoss: 0.7511901236599023
iteration: 2 HingeLoss: 0.08164019324719102
iteration: 3 HingeLoss: 0.03276875030704451
iteration: 4 HingeLoss: 0.032699353449083826
Convergence reached in 4 iterations
[-2.23118044e-03 5.51413111e-04 -1.44358134e-03 ... 1.78347212e-03
 -1.80431389e-04 9.90130150e-05]
CROSS VALIDATION 9
iteration: 0 HingeLoss: 11.048876290875954
iteration: 1 HingeLoss: 0.39810334718085505
iteration: 2 HingeLoss: 0.032280888342352244
iteration: 3 HingeLoss: 0.032212524666528526
Convergence reached in 3 iterations
[-0.00297698 -0.00026434 -0.00084544 ... 0.00203939 0.00162308
 0.00019929]
CROSS VALIDATION 10
iteration: 0 HingeLoss: 13.34755651247703
iteration: 1 HingeLoss: 11.553383816266521
iteration: 2 HingeLoss: 0.032890425619217505
iteration: 3 HingeLoss: 0.03282077108025656
Convergence reached in 3 iterations
[-0.00197432 -0.00012362 -0.0014115 ... 0.00231281 0.00098025
 0.0003985 ]
CROSS VALIDATION 11
iteration: 0 HingeLoss: 20.787757492590917
iteration: 1 HingeLoss: 1.3269678391560673
iteration: 2 HingeLoss: 0.6562435659315177
iteration: 3 HingeLoss: 0.0328017978137417
iteration: 4 HingeLoss: 0.032732330968579595
Convergence reached in 4 iterations
[-0.00293237 -0.00029478 -0.00052928 ... 0.00221911 0.00134442
 0.00019935]
CROSS VALIDATION 12
iteration: 0 HingeLoss: 19.127841889379216
iteration: 1 HingeLoss: 4.430121165377909
iteration: 2 HingeLoss: 0.03533137152823266
iteration: 3 HingeLoss: 0.03525654761372486
```

Output\_hinge\_train.txt

Convergence reached in 3 iterations

[-4.41769086e-03 -5.64231895e-04 -1.82683408e-03 ... 2.07137311e-03  
1.26334305e-03 9.97722783e-05]

CROSS VALIDATION 13

iteration: 0 HingeLoss: 20.78828347721973  
iteration: 1 HingeLoss: 1.32683911634452  
iteration: 2 HingeLoss: 0.6564663764290465  
iteration: 3 HingeLoss: 0.03280185270500338  
iteration: 4 HingeLoss: 0.032732385743593884

Convergence reached in 4 iterations

[-0.00293236 -0.00029477 -0.00052928 ... 0.00221911 0.00134442  
0.00019935]

CROSS VALIDATION 14

iteration: 0 HingeLoss: 20.78828347721973  
iteration: 1 HingeLoss: 0.02946010161219414  
iteration: 2 HingeLoss: 0.029397711729518335

Convergence reached in 2 iterations

[-2.67776781e-03 -3.46922063e-04 -4.99346090e-04 ... 1.64813764e-03  
7.86024720e-04 -1.65614373e-07]

CROSS VALIDATION 15

iteration: 0 HingeLoss: 20.78828347721973  
iteration: 1 HingeLoss: 1.326839116344523  
iteration: 2 HingeLoss: 0.6565021042047774  
iteration: 3 HingeLoss: 0.03280191634505979  
iteration: 4 HingeLoss: 0.03273244924887494

Convergence reached in 4 iterations

[-0.00293237 -0.00029478 -0.00052928 ... 0.00221912 0.00134443  
0.00019935]

CROSS VALIDATION 16

iteration: 0 HingeLoss: 20.78828347721973  
iteration: 1 HingeLoss: 0.027965210464883084  
iteration: 2 HingeLoss: 0.027905986426117847

Convergence reached in 2 iterations

[-2.26350052e-03 -3.22760189e-04 -3.67552961e-04 ... 1.63333473e-03  
7.90304815e-04 9.96545457e-05]

CROSS VALIDATION 17

iteration: 0 HingeLoss: 20.78828347721973  
iteration: 1 HingeLoss: 1.3269015734381837  
iteration: 2 HingeLoss: 0.6565987630764982  
iteration: 3 HingeLoss: 0.03280197475516838  
iteration: 4 HingeLoss: 0.032732507535284026

Convergence reached in 4 iterations

[-0.00293238 -0.00029478 -0.00052928 ... 0.00221912 0.00134443  
0.00019935]

CROSS VALIDATION 18

iteration: 0 HingeLoss: 24.171692080366768  
iteration: 1 HingeLoss: 15.051404328683672  
iteration: 2 HingeLoss: 0.034295763338748675  
iteration: 3 HingeLoss: 0.03422313260993626

Convergence reached in 3 iterations

[-0.00391049 -0.00062628 -0.00230009 ... 0.00269593 0.0013148  
0.00019921]

Output\_hinge\_train.txt

CROSS VALIDATION 19

iteration: 0 HingeLoss: 30.23841775763397

iteration: 1 HingeLoss: 13.721401524383891

iteration: 2 HingeLoss: 0.02794608071526966

iteration: 3 HingeLoss: 0.02788689718902031

Convergence reached in 3 iterations

[-0.0021149 -0.00061535 -0.00160354 ... 0.00109032 0.00038024  
0.00019917]

Accuracy (Hinge Loss): 0.7