

## accuracy

|    | epoch   | clean_test | noisy_subset | clean_subset        | cleaned_noisy_subset |
|----|---------|------------|--------------|---------------------|----------------------|
| 0  | 500.0   | 0.0395     | 0.0094       | 0.03966666666666667 | 0.0366               |
| 1  | 1000.0  | 0.0784     | 0.01065      | 0.07856666666666667 | 0.07545              |
| 2  | 1500.0  | 0.1113     | 0.01085      | 0.11006666666666666 | 0.10395              |
| 3  | 2000.0  | 0.1494     | 0.0095       | 0.15343333333333334 | 0.1455               |
| 4  | 2500.0  | 0.1813     | 0.0097       | 0.18116666666666667 | 0.16685              |
| 5  | 3000.0  | 0.1988     | 0.00935      | 0.1972              | 0.18435              |
| 6  | 3500.0  | 0.2194     | 0.0092       | 0.231               | 0.2155               |
| 7  | 4000.0  | 0.234      | 0.00925      | 0.24486666666666668 | 0.21985              |
| 8  | 4500.0  | 0.2436     | 0.01075      | 0.256               | 0.23125              |
| 9  | 5000.0  | 0.2784     | 0.0095       | 0.28653333333333333 | 0.25715              |
| 10 | 5500.0  | 0.2966     | 0.0079       | 0.31563333333333333 | 0.2809               |
| 11 | 6000.0  | 0.3129     | 0.00885      | 0.3252              | 0.294                |
| 12 | 6500.0  | 0.3271     | 0.0087       | 0.34373333333333334 | 0.30555              |
| 13 | 7000.0  | 0.3599     | 0.01005      | 0.37633333333333335 | 0.33225              |
| 14 | 7500.0  | 0.36       | 0.0095       | 0.38163333333333333 | 0.3333               |
| 15 | 8000.0  | 0.3735     | 0.0096       | 0.39573333333333333 | 0.34915              |
| 16 | 8500.0  | 0.379      | 0.01         | 0.40666666666666667 | 0.36145              |
| 17 | 9000.0  | 0.3981     | 0.00855      | 0.42093333333333333 | 0.36605              |
| 18 | 9500.0  | 0.4106     | 0.00965      | 0.43916666666666665 | 0.3844               |
| 19 | 10000.0 | 0.4211     | 0.0088       | 0.4528              | 0.39                 |
| 20 | 10500.0 | 0.4198     | 0.0106       | 0.44943333333333335 | 0.38965              |
| 21 | 11000.0 | 0.4392     | 0.0093       | 0.46826666666666666 | 0.40395              |
| 22 | 11500.0 | 0.44       | 0.00925      | 0.48676666666666667 | 0.4162               |
| 23 | 12000.0 | 0.4281     | 0.00975      | 0.45783333333333333 | 0.39965              |
| 24 | 12500.0 | 0.4392     | 0.0097       | 0.47896666666666665 | 0.4135               |
| 25 | 13000.0 | 0.4642     | 0.0097       | 0.4959              | 0.4235               |
| 26 | 13500.0 | 0.4441     | 0.0099       | 0.48866666666666667 | 0.4152               |
| 27 | 14000.0 | 0.4624     | 0.0103       | 0.5155              | 0.43565              |
| 28 | 14500.0 | 0.4642     | 0.01155      | 0.5061              | 0.42105              |
| 29 | 15000.0 | 0.4667     | 0.01055      | 0.5164666666666666  | 0.42955              |
| 30 | 15500.0 | 0.4695     | 0.01035      | 0.51726666666666667 | 0.43685              |

|    |         |        |         |                    |         |
|----|---------|--------|---------|--------------------|---------|
| 31 | 16000.0 | 0.4537 | 0.01055 | 0.4966             | 0.4191  |
| 32 | 16500.0 | 0.4744 | 0.00965 | 0.5301             | 0.44545 |
| 33 | 17000.0 | 0.4764 | 0.0108  | 0.5301             | 0.43195 |
| 34 | 17500.0 | 0.4773 | 0.0103  | 0.5433             | 0.4513  |
| 35 | 18000.0 | 0.4849 | 0.00955 | 0.5296333333333333 | 0.4382  |
| 36 | 18500.0 | 0.4905 | 0.0117  | 0.5488666666666666 | 0.45185 |
| 37 | 19000.0 | 0.4816 | 0.00955 | 0.5348             | 0.43885 |
| 38 | 19500.0 | 0.4982 | 0.01125 | 0.5678             | 0.45985 |
| 39 | 20000.0 | 0.5076 | 0.01045 | 0.5777             | 0.4738  |
| 40 | 20500.0 | 0.5805 | 0.0133  | 0.6808             | 0.5483  |
| 41 | 21000.0 | 0.5881 | 0.014   | 0.7062             | 0.56005 |
| 42 | 21500.0 | 0.5932 | 0.01635 | 0.7253333333333334 | 0.55855 |
| 43 | 22000.0 | 0.5927 | 0.0164  | 0.7345333333333334 | 0.5591  |
| 44 | 22500.0 | 0.5943 | 0.01945 | 0.7423666666666666 | 0.5547  |
| 45 | 23000.0 | 0.5964 | 0.02065 | 0.7547666666666667 | 0.55255 |
| 46 | 23500.0 | 0.5919 | 0.0229  | 0.7613333333333333 | 0.55025 |
| 47 | 24000.0 | 0.5922 | 0.02535 | 0.7734333333333333 | 0.5441  |
| 48 | 24500.0 | 0.5889 | 0.0284  | 0.7794666666666666 | 0.53965 |
| 49 | 25000.0 | 0.5878 | 0.02945 | 0.7850333333333334 | 0.535   |
| 50 | 25500.0 | 0.5833 | 0.032   | 0.7915             | 0.52915 |
| 51 | 26000.0 | 0.5831 | 0.0368  | 0.8000333333333334 | 0.5227  |
| 52 | 26500.0 | 0.5821 | 0.0382  | 0.8027333333333333 | 0.51615 |
| 53 | 27000.0 | 0.578  | 0.04215 | 0.8137666666666666 | 0.5103  |
| 54 | 27500.0 | 0.5693 | 0.04485 | 0.8189333333333333 | 0.50695 |
| 55 | 28000.0 | 0.5704 | 0.04715 | 0.8155666666666667 | 0.4961  |
| 56 | 28500.0 | 0.5719 | 0.04875 | 0.8189             | 0.49065 |
| 57 | 29000.0 | 0.5698 | 0.052   | 0.8297333333333333 | 0.4891  |
| 58 | 29500.0 | 0.5663 | 0.0578  | 0.8329666666666666 | 0.486   |
| 59 | 30000.0 | 0.5614 | 0.06085 | 0.8401333333333333 | 0.4706  |
| 60 | 30500.0 | 0.5747 | 0.07145 | 0.8694             | 0.48865 |
| 61 | 31000.0 | 0.578  | 0.0751  | 0.8768666666666667 | 0.48475 |
| 62 | 31500.0 | 0.5773 | 0.07805 | 0.8804333333333333 | 0.48345 |
| 63 | 32000.0 | 0.5747 | 0.0829  | 0.8838333333333334 | 0.47575 |
| 64 | 32500.0 | 0.5751 | 0.0842  | 0.8859             | 0.4757  |

|    |         |        |         |                    |         |
|----|---------|--------|---------|--------------------|---------|
| 65 | 33000.0 | 0.5745 | 0.08505 | 0.8863333333333333 | 0.47775 |
| 66 | 33500.0 | 0.5694 | 0.0902  | 0.8896             | 0.46755 |
| 67 | 34000.0 | 0.5733 | 0.08995 | 0.8901             | 0.46275 |
| 68 | 34500.0 | 0.5744 | 0.09325 | 0.8937333333333334 | 0.4671  |
| 69 | 35000.0 | 0.571  | 0.0956  | 0.8940333333333333 | 0.4632  |
| 70 | 35500.0 | 0.5673 | 0.09885 | 0.8966             | 0.45835 |
| 71 | 36000.0 | 0.5667 | 0.1012  | 0.8976666666666666 | 0.4523  |
| 72 | 36500.0 | 0.569  | 0.104   | 0.9001333333333333 | 0.456   |
| 73 | 37000.0 | 0.5675 | 0.10505 | 0.8996333333333333 | 0.45065 |
| 74 | 37500.0 | 0.5688 | 0.1079  | 0.9015666666666666 | 0.45075 |
| 75 | 38000.0 | 0.5633 | 0.10865 | 0.9021666666666667 | 0.44395 |
| 76 | 38500.0 | 0.5626 | 0.1081  | 0.9025             | 0.44565 |
| 77 | 39000.0 | 0.5606 | 0.112   | 0.9044333333333333 | 0.4413  |

loss

|    | epoch  | clean_test         | noisy_subset       | clean_subset       | cleaned_noisy_subset |
|----|--------|--------------------|--------------------|--------------------|----------------------|
| 0  | 500.0  | 4.447104823589325  | 4.639347022092795  | 4.457864405745167  | 4.462924516653713    |
| 1  | 1000.0 | 4.261734473705292  | 4.660447072379196  | 4.280567880404198  | 4.291441513013236    |
| 2  | 1500.0 | 4.121237516403198  | 4.672509114953536  | 4.148710012435913  | 4.17003615898422     |
| 3  | 2000.0 | 3.9882093548774717 | 4.675710358197176  | 4.018178600375935  | 4.049938156634947    |
| 4  | 2500.0 | 3.899243712425232  | 4.671920468535604  | 3.9310461909083996 | 3.9713756706141217   |
| 5  | 3000.0 | 3.7875604808330534 | 4.683955029596256  | 3.832044724690712  | 3.876516870305508    |
| 6  | 3500.0 | 3.7434810996055603 | 4.6781952954545805 | 3.756447406138404  | 3.811227149601224    |
| 7  | 4000.0 | 3.609754854440689  | 4.698050408423701  | 3.630018504999452  | 3.7081253498415405   |
| 8  | 4500.0 | 3.5994653522968294 | 4.682224321968948  | 3.6267241865901623 | 3.708974198450016    |
| 9  | 5000.0 | 3.460100066661835  | 4.698495792437203  | 3.4722491038047663 | 3.5733947723726684   |
| 10 | 5500.0 | 3.4021423697471618 | 4.695801408984993  | 3.4264291625911905 | 3.53274454346186     |
| 11 | 6000.0 | 3.354395163059235  | 4.693318028993245  | 3.3802310167732887 | 3.4929957480370244   |
| 12 | 6500.0 | 3.2894599556922914 | 4.696848217445083  | 3.3068714768199596 | 3.4306131646602966   |
| 13 | 7000.0 | 3.2002316415309906 | 4.697261110136781  | 3.2253405118392684 | 3.360334094566635    |
| 14 | 7500.0 | 3.149066078662872  | 4.711231611951997  | 3.1615752709113947 | 3.303734163694744    |
| 15 | 8000.0 | 3.1406533300876616 | 4.703135327447819  | 3.143204895116515  | 3.2879651166215726   |
| 16 | 8500.0 | 3.102597552537918  | 4.702364330050312  | 3.0907610998315325 | 3.251243268242365    |

|    |         |                    |                    |                    |                    |
|----|---------|--------------------|--------------------|--------------------|--------------------|
| 16 | 8500.0  | 3.102337332337318  | 4.702304330030312  | 3.0307010330313323 | 3.2374243200242303 |
| 17 | 9000.0  | 3.0343027472496034 | 4.712574524215505  | 3.032101166450371  | 3.194555747358105  |
| 18 | 9500.0  | 3.007594460248947  | 4.714028714578363  | 2.967056126917823  | 3.1523261372047133 |
| 19 | 10000.0 | 2.9655843019485473 | 4.716803912875019  | 2.9339080260971846 | 3.132123325444475  |
| 20 | 10500.0 | 2.933140343427658  | 4.7287293868728835 | 2.90109868372901   | 3.099098806139789  |
| 21 | 11000.0 | 2.9401690661907196 | 4.71094206918644   | 2.8784586312407154 | 3.0912644531153424 |
| 22 | 11500.0 | 2.9559762358665465 | 4.705889019785048  | 2.8397943165342685 | 3.07012612306619   |
| 23 | 12000.0 | 2.9178837895393372 | 4.728632582893854  | 2.8614612332845137 | 3.0872685034063796 |
| 24 | 12500.0 | 2.878792405128479  | 4.723936853529532  | 2.8005083476082753 | 3.034089477756355  |
| 25 | 13000.0 | 2.8183286666870115 | 4.721004474012157  | 2.753310276290118  | 3.000986956342866  |
| 26 | 13500.0 | 2.8969717800617216 | 4.707135936881922  | 2.8099719750679144 | 3.0429250680947604 |
| 27 | 14000.0 | 2.8165532767772676 | 4.709715957883038  | 2.7251665470963817 | 2.992878533616851  |
| 28 | 14500.0 | 2.7889396965503694 | 4.714761697793309  | 2.72633934627145   | 3.000232237803785  |
| 29 | 15000.0 | 2.7929718613624575 | 4.71839653691159   | 2.69650610422684   | 2.985059324699112  |
| 30 | 15500.0 | 2.7703364610672    | 4.7158637952200975 | 2.6906565872289367 | 2.972384277778336  |
| 31 | 16000.0 | 2.8651529133319853 | 4.708042893228652  | 2.776573005369154  | 3.0404185011417053 |
| 32 | 16500.0 | 2.7464593827724455 | 4.716086653214466  | 2.6298209287352483 | 2.9236919004705886 |
| 33 | 17000.0 | 2.761723351478577  | 4.715717689900458  | 2.6397239454722    | 2.957261414467534  |
| 34 | 17500.0 | 2.7631287276744843 | 4.705613142327417  | 2.6126620648270946 | 2.9293765599214576 |
| 35 | 18000.0 | 2.781717950105667  | 4.7024582367909105 | 2.672945537809598  | 2.9754371733605107 |
| 36 | 18500.0 | 2.7489563465118407 | 4.697314527970326  | 2.615962442705187  | 2.9456550712826886 |
| 37 | 19000.0 | 2.765870916843414  | 4.708307682713376  | 2.624620110301648  | 2.9641459923756273 |
| 38 | 19500.0 | 2.687169998884201  | 4.710674696330782  | 2.5202581862271844 | 2.869796460187888  |
| 39 | 20000.0 | 2.6524567723274233 | 4.7054759098004695 | 2.4802156484733193 | 2.845294454429723  |
| 40 | 20500.0 | 2.388498491048813  | 4.680652793449692  | 2.1122685448598055 | 2.5814108003543903 |
| 41 | 21000.0 | 2.3664471566677094 | 4.665396388572983  | 2.0189046496051852 | 2.5577077533625348 |
| 42 | 21500.0 | 2.353202188014984  | 4.649818510948857  | 1.9602340924537789 | 2.563901333869258  |
| 43 | 22000.0 | 2.3682590901851652 | 4.628343835661683  | 1.9275791645050049 | 2.5870943129817143 |
| 44 | 22500.0 | 2.3527303278446197 | 4.613335567184642  | 1.8803097918882208 | 2.5897544577151916 |
| 45 | 23000.0 | 2.3779889047145844 | 4.5943101750144475 | 1.8631879808539051 | 2.623097341271895  |
| 46 | 23500.0 | 2.3816982924938204 | 4.573360503474368  | 1.8268454569881245 | 2.638383379465417  |
| 47 | 24000.0 | 2.367050576210022  | 4.560454422914529  | 1.7785073316703408 | 2.6439504864849623 |
| 48 | 24500.0 | 2.3678837776184083 | 4.541050096101399  | 1.7551044670201965 | 2.6692336148853544 |
| 49 | 25000.0 | 2.3721974015235903 | 4.521278809897507  | 1.7281854657803553 | 2.6869188833840285 |

|    |         |                    |                    |                     |                    |
|----|---------|--------------------|--------------------|---------------------|--------------------|
| 50 | 25500.0 | 2.404137057065964  | 4.500015518333338  | 1.712006101163767   | 2.717973253394984  |
| 51 | 26000.0 | 2.3942317843437193 | 4.482695307912706  | 1.6817199496899622  | 2.732735163048853  |
| 52 | 26500.0 | 2.433005130290985  | 4.458877026280271  | 1.661043163073265   | 2.770172940024847  |
| 53 | 27000.0 | 2.419929623603821  | 4.439238584494289  | 1.6240778767456443  | 2.778356805632386  |
| 54 | 27500.0 | 2.428715151548386  | 4.41928249069407   | 1.597123664314464   | 2.796370922764645  |
| 55 | 28000.0 | 2.4250257134437563 | 4.403825222691403  | 1.59301711103800757 | 2.8238485945930965 |
| 56 | 28500.0 | 2.4701377034187315 | 4.383533749399306  | 1.5971629356933852  | 2.8684899716437617 |
| 57 | 29000.0 | 2.4507148802280425 | 4.362589226493353  | 1.5504789503954224  | 2.860263821444934  |
| 58 | 29500.0 | 2.4621777296066285 | 4.33733339551129   | 1.5530202924194982  | 2.8928362387645095 |
| 59 | 30000.0 | 2.486008882522583  | 4.314661134647418  | 1.5234086735773895  | 2.914820474914358  |
| 60 | 30500.0 | 2.435024505853653  | 4.251503256302845  | 1.3956568291631795  | 2.9072092364106    |
| 61 | 31000.0 | 2.467240333557129  | 4.223173340664634  | 1.3889689384880712  | 2.93875561183012   |
| 62 | 31500.0 | 2.465063351392746  | 4.210725645475749  | 1.3663557212231523  | 2.9540965013866183 |
| 63 | 32000.0 | 2.478083389997482  | 4.19210211838348   | 1.3551318453530135  | 2.970849568330789  |
| 64 | 32500.0 | 2.463919872045517  | 4.18474883067457   | 1.3282911100630033  | 2.969831511944155  |
| 65 | 33000.0 | 2.4759952306747435 | 4.174080082132846  | 1.318278740018101   | 2.981881440440311  |
| 66 | 33500.0 | 2.485936725139618  | 4.162783212299589  | 1.311762506678953   | 3.0012992213043987 |
| 67 | 34000.0 | 2.501131957769394  | 4.155347425726395  | 1.3065389829166865  | 3.0244678877577    |
| 68 | 34500.0 | 2.485282653570175  | 4.141013453278361  | 1.2899803994065624  | 3.01236536231222   |
| 69 | 35000.0 | 2.501647561788559  | 4.132389310040051  | 1.2893790764323736  | 3.027132070517238  |
| 70 | 35500.0 | 2.524205833673477  | 4.119275636310819  | 1.2964904086064484  | 3.0590702068956594 |
| 71 | 36000.0 | 2.5115068316459657 | 4.1116987844056725 | 1.2680435039229312  | 3.0614013219181495 |
| 72 | 36500.0 | 2.5252798438072204 | 4.09824020047731   | 1.2813633447986539  | 3.0745871519740624 |
| 73 | 37000.0 | 2.522584396600723  | 4.093669511094878  | 1.26363972890175    | 3.0776924634281593 |
| 74 | 37500.0 | 2.521354466676712  | 4.089224954194661  | 1.2582939539925526  | 3.0668230871611004 |
| 75 | 38000.0 | 2.533277279138565  | 4.076233329652231  | 1.2623297178139121  | 3.099462853202337  |
| 76 | 38500.0 | 2.543723601102829  | 4.070061122314839  | 1.2532525961681948  | 3.104222189022016  |
| 77 | 39000.0 | 2.540280258655548  | 4.062036791934243  | 1.2503225429583404  | 3.113879264155521  |

normalised\_entropy

|   | epoch  | clean_test         | noisy_subset      | clean_subset       | cleaned_noisy_subset |
|---|--------|--------------------|-------------------|--------------------|----------------------|
| 0 | 500.0  | 0.9907169883728028 | 0.992381116771698 | 0.992279675801595  | 0.9923939992904663   |
| 1 | 1000.0 | 0.9828414347648621 | 0.985802176952362 | 0.9857782248179118 | 0.9857844551086425   |

|    |         |                    |                    |                    |                    |
|----|---------|--------------------|--------------------|--------------------|--------------------|
| 2  | 1500.0  | 0.9764897506713868 | 0.9809325479507446 | 0.9806874982198079 | 0.9809376661300659 |
| 3  | 2000.0  | 0.9729266246795655 | 0.9775541501998901 | 0.9770752398173014 | 0.9775213050842285 |
| 4  | 2500.0  | 0.96914876537323   | 0.9753724876403809 | 0.9746575340270996 | 0.9753839632034301 |
| 5  | 3000.0  | 0.9591418089866638 | 0.9683839384078979 | 0.9672954508463542 | 0.9684132756233216 |
| 6  | 3500.0  | 0.9620578982353211 | 0.9684440195083618 | 0.9668218905131022 | 0.9684414662361145 |
| 7  | 4000.0  | 0.9466445682525635 | 0.9568816844940186 | 0.9544832125345866 | 0.956916159248352  |
| 8  | 4500.0  | 0.9506848850250245 | 0.9614952917098999 | 0.9594286843617758 | 0.9617893438339233 |
| 9  | 5000.0  | 0.9380586411476135 | 0.9506072557449341 | 0.9475426500956218 | 0.9505945678710938 |
| 10 | 5500.0  | 0.9382931345939636 | 0.952439405632019  | 0.9491931509653727 | 0.9523510087013245 |
| 11 | 6000.0  | 0.9363340045928955 | 0.9504172504425049 | 0.9465001406351725 | 0.9502611883163452 |
| 12 | 6500.0  | 0.9294040908813477 | 0.9453511379241943 | 0.9406128969828288 | 0.9452037250518799 |
| 13 | 7000.0  | 0.9312419103622437 | 0.9459935997009278 | 0.940541670481364  | 0.9458315974235535 |
| 14 | 7500.0  | 0.9192083322525024 | 0.9368413437843323 | 0.9308630510965983 | 0.9367526657104492 |
| 15 | 8000.0  | 0.9239953867912293 | 0.9405569648742675 | 0.9335422952016195 | 0.9402875085830689 |
| 16 | 8500.0  | 0.9200170040130615 | 0.9382923587799072 | 0.9304223082224528 | 0.9380371359825135 |
| 17 | 9000.0  | 0.9149956439971924 | 0.9320022294998169 | 0.9240393811543782 | 0.932114511013031  |
| 18 | 9500.0  | 0.9132134975433349 | 0.9296680216789246 | 0.9204582524617513 | 0.9296123514175415 |
| 19 | 10000.0 | 0.910218235206604  | 0.9272395411491394 | 0.9170833000183105 | 0.9276806693077088 |
| 20 | 10500.0 | 0.9000995862960816 | 0.9193827795028686 | 0.9083269480387369 | 0.919351093673706  |
| 21 | 11000.0 | 0.9083504783630371 | 0.9269796726226807 | 0.915730726369222  | 0.9267478021621705 |
| 22 | 11500.0 | 0.9132397871971131 | 0.9265480237960816 | 0.9148553192138672 | 0.9267110394477844 |
| 23 | 12000.0 | 0.8971372825622559 | 0.915900794506073  | 0.9038967920939127 | 0.9164560522079468 |
| 24 | 12500.0 | 0.8955218088150024 | 0.9149203393936157 | 0.9025156150817871 | 0.914811148071289  |
| 25 | 13000.0 | 0.8939755898475646 | 0.9154288375854492 | 0.9004100596110026 | 0.9147979230880737 |
| 26 | 13500.0 | 0.903265749168396  | 0.9208352021217346 | 0.9078752215067546 | 0.9203775868415832 |
| 27 | 14000.0 | 0.8937767978668213 | 0.9172127031326294 | 0.9009327786763509 | 0.9173459730148316 |
| 28 | 14500.0 | 0.8856366233825683 | 0.9126048467636109 | 0.8970630182902019 | 0.913505073928833  |
| 29 | 15000.0 | 0.8892572732925415 | 0.9131426858901978 | 0.8950470634460449 | 0.9130864194869995 |
| 30 | 15500.0 | 0.8854414770126343 | 0.9120045516967773 | 0.8941444609324137 | 0.9118244812965393 |
| 31 | 16000.0 | 0.8965631233215332 | 0.9175610641479492 | 0.9028486063639323 | 0.9174736596107483 |
| 32 | 16500.0 | 0.8855850288391113 | 0.9093546360969543 | 0.8903566432952881 | 0.9085666908264161 |
| 33 | 17000.0 | 0.8841508443832398 | 0.9090821500778198 | 0.8879736095428467 | 0.9084679920196533 |
| 34 | 17500.0 | 0.8907139295578003 | 0.9119889381408691 | 0.8921337601979573 | 0.9122555739402771 |
| 35 | 18000.0 | 0.892540418624878  | 0.9145120212782812 | 0.8967425114542642 | 0.9146502002765800 |

|    |         |                    |                    |                    |                    |
|----|---------|--------------------|--------------------|--------------------|--------------------|
| 35 | 18000.0 | 0.892340418624878  | 0.9145130212783813 | 0.8987433114542043 | 0.9146303092763809 |
| 36 | 18500.0 | 0.8910664182662964 | 0.9136150562286377 | 0.8929444367726644 | 0.913867303276062  |
| 37 | 19000.0 | 0.8828805325508118 | 0.9085984535217285 | 0.8879186351776123 | 0.9087585144042969 |
| 38 | 19500.0 | 0.8793456995010376 | 0.9044813137054444 | 0.8829253339131673 | 0.9049141315460205 |
| 39 | 20000.0 | 0.8779918004035949 | 0.9044695045471192 | 0.8784354951222738 | 0.9045356630325317 |
| 40 | 20500.0 | 0.8607458765983581 | 0.8927428442001343 | 0.8508937240600586 | 0.8927541996002197 |
| 41 | 21000.0 | 0.8560165279388428 | 0.889133638381958  | 0.838394278717041  | 0.8887208257675171 |
| 42 | 21500.0 | 0.854944302558899  | 0.8906565279006958 | 0.8333048762003581 | 0.8904271373748779 |
| 43 | 22000.0 | 0.8555535420417786 | 0.8935939344406127 | 0.8294247996012369 | 0.8932511160850525 |
| 44 | 22500.0 | 0.8534211599349976 | 0.8921162752151489 | 0.8223179964701335 | 0.892043409538269  |
| 45 | 23000.0 | 0.8570690279960632 | 0.8962910953521729 | 0.8230502902984619 | 0.8966646160125732 |
| 46 | 23500.0 | 0.855570392036438  | 0.8975243619918823 | 0.818056588490804  | 0.8966155946731568 |
| 47 | 24000.0 | 0.8505959035873413 | 0.8962332828521729 | 0.8104430759429931 | 0.8965920585632324 |
| 48 | 24500.0 | 0.8483239030838012 | 0.8974555065155029 | 0.8068763938903809 | 0.8979529048919678 |
| 49 | 25000.0 | 0.8455693614959717 | 0.8977474230766297 | 0.8019228268941243 | 0.8970172597885132 |
| 50 | 25500.0 | 0.8504729488372803 | 0.9003033365249634 | 0.8003538118998209 | 0.9003837350845337 |
| 51 | 26000.0 | 0.8457196376800538 | 0.9007986262321472 | 0.7942647337595622 | 0.9005346235275269 |
| 52 | 26500.0 | 0.8511425205230713 | 0.9029054133415222 | 0.793071819559733  | 0.9027574142456055 |
| 53 | 27000.0 | 0.8460264022827149 | 0.901643946647644  | 0.783831571706136  | 0.9010856086730957 |
| 54 | 27500.0 | 0.8434274885177613 | 0.9018462426185608 | 0.7797338717142741 | 0.9016413694381714 |
| 55 | 28000.0 | 0.8403781235694885 | 0.9022920130729676 | 0.7764744097391765 | 0.9016011907577515 |
| 56 | 28500.0 | 0.8465311368942261 | 0.9051453631401062 | 0.7791979443868001 | 0.9055790935516358 |
| 57 | 29000.0 | 0.8438164127349853 | 0.9038366933822631 | 0.7724132962544759 | 0.9041158840179443 |
| 58 | 29500.0 | 0.8442041076660156 | 0.9070839465141296 | 0.7724903811136882 | 0.9069132553100586 |
| 59 | 30000.0 | 0.8429311082839965 | 0.9060525226593018 | 0.7681189267476399 | 0.9055842586517334 |
| 60 | 30500.0 | 0.8448241579055786 | 0.9111378650665283 | 0.7515385369618733 | 0.9105447618484497 |
| 61 | 31000.0 | 0.8514101694107056 | 0.9150034982681274 | 0.7536926114400228 | 0.9149746754646301 |
| 62 | 31500.0 | 0.8503069219589233 | 0.915272760105133  | 0.7486029883066813 | 0.9152641437530518 |
| 63 | 32000.0 | 0.8511741034507752 | 0.9159905855178833 | 0.7467514026641846 | 0.9150017810821534 |
| 64 | 32500.0 | 0.8459586799621582 | 0.9139094427108765 | 0.7380440111796062 | 0.9137388174057007 |
| 65 | 33000.0 | 0.8466781038284302 | 0.913890525341034  | 0.736011248143514  | 0.9143033005714416 |
| 66 | 33500.0 | 0.8472751428604126 | 0.9151793709754944 | 0.7356260351816813 | 0.9153443338394165 |
| 67 | 34000.0 | 0.8506631860733033 | 0.9158749550819397 | 0.7356283449808757 | 0.9161646771430969 |
| 68 | 34500.0 | 0.8461204020500183 | 0.915137041091919  | 0.7309491013844808 | 0.9146878665924072 |

|    |         |                    |                    |                    |                    |
|----|---------|--------------------|--------------------|--------------------|--------------------|
| 69 | 35000.0 | 0.848377480506897  | 0.9156607926368714 | 0.7313432281494141 | 0.9156123859405517 |
| 70 | 35500.0 | 0.8520142175674439 | 0.9182337814331055 | 0.7350175969441731 | 0.9185212320327759 |
| 71 | 36000.0 | 0.8479096457481384 | 0.9156872119903564 | 0.7261764035542806 | 0.9153222202301026 |
| 72 | 36500.0 | 0.8513996265411377 | 0.918149720287323  | 0.7313956671396892 | 0.9188659982681274 |
| 73 | 37000.0 | 0.8488424695014953 | 0.9161975988388061 | 0.7241450052897136 | 0.9162172906875611 |
| 74 | 37500.0 | 0.848702748298645  | 0.9170281934738159 | 0.7257622540791829 | 0.9167496482849121 |
| 75 | 38000.0 | 0.8497878942489624 | 0.9182238627433776 | 0.7269296960194905 | 0.9182178049087525 |
| 76 | 38500.0 | 0.8497043444633484 | 0.918389953994751  | 0.7239611745198568 | 0.917860158920288  |
| 77 | 39000.0 | 0.8487669997215271 | 0.9184744959831238 | 0.7246975746154786 | 0.9190477096557618 |

max\_p

|    | epoch   | clean_test           | noisy_subset         | clean_subset         | cleaned_noisy_subset |
|----|---------|----------------------|----------------------|----------------------|----------------------|
| 0  | 500.0   | 0.01961565492749214  | 0.018474065223336220 | 0.018547062857945760 | 0.018461489349603653 |
| 1  | 1000.0  | 0.028104218369722368 | 0.025305687674880027 | 0.025342508506774903 | 0.025316682922840117 |
| 2  | 1500.0  | 0.036203683596849440 | 0.031555685448646544 | 0.031797778129577640 | 0.03156286925077438  |
| 3  | 2000.0  | 0.041100580722093584 | 0.035924458587169646 | 0.036410852603117626 | 0.03594424833059311  |
| 4  | 2500.0  | 0.048099262732267380 | 0.040960449934005740 | 0.041863248856862385 | 0.04092550365924835  |
| 5  | 3000.0  | 0.059872135180234910 | 0.0497872906267643   | 0.051078062502543130 | 0.04964501442909241  |
| 6  | 3500.0  | 0.057220331591367725 | 0.050370511400699610 | 0.052365237283706664 | 0.05033525710701942  |
| 7  | 4000.0  | 0.076966139864921570 | 0.065446971660852430 | 0.068474017953872690 | 0.06541947605609894  |
| 8  | 4500.0  | 0.072444883716106410 | 0.060567393797636030 | 0.063382219918568930 | 0.06022541566491127  |
| 9  | 5000.0  | 0.090008224916458130 | 0.075800216484069830 | 0.079827878824869790 | 0.07583588047027588  |
| 10 | 5500.0  | 0.091820518445968630 | 0.075401280474662780 | 0.0798504551410675   | 0.07559870765209198  |
| 11 | 6000.0  | 0.094623660385608670 | 0.078325678038597110 | 0.083705299917856860 | 0.07853620682954789  |
| 12 | 6500.0  | 0.105808884346485140 | 0.086429359519481660 | 0.092624382861455290 | 0.0867474998474121   |
| 13 | 7000.0  | 0.103907415521144870 | 0.0852845757484436   | 0.092545825052261350 | 0.08544903075695037  |
| 14 | 7500.0  | 0.119558204722404480 | 0.098223035669326790 | 0.106077282921473180 | 0.09833044095039367  |
| 15 | 8000.0  | 0.115647963774204250 | 0.095046737003326410 | 0.104406339311599730 | 0.0953722806930542   |
| 16 | 8500.0  | 0.121097929215431210 | 0.098324214935302730 | 0.108750080808003750 | 0.09857971143722534  |
| 17 | 9000.0  | 0.128600328898429870 | 0.1070692659854889   | 0.117578826173146560 | 0.10683817434310913  |
| 18 | 9500.0  | 0.132121154499053960 | 0.111163573646545420 | 0.123317741775512690 | 0.11146406416893005  |
| 19 | 10000.0 | 0.134711555457115160 | 0.113405237972736360 | 0.126611367988586440 | 0.11269675199985504  |
| 20 | 10500.0 | 0.148928419995307930 | 0.124843496727943430 | 0.138982598876953130 | 0.1248106266260147   |



|    |         |  |
|----|---------|--|
| 21 | 11000.0 | 0.139362166881561280.115505918312072760.130578509934743240.11585633096694946 |
| 22 | 11500.0 | 0.134717875277996060.117440367197990420.1330009582042694 0.11725140898227691 |
| 23 | 12000.0 | 0.156508980560302740.1327177780151367 0.1482682463010152 0.13199909849166871 |
| 24 | 12500.0 | 0.157176333320140830.1324321637392044 0.148637288220723470.13261501541137696 |
| 25 | 13000.0 | 0.159975061821937550.1325347267985344 0.152095819091796870.13337749600410462 |
| 26 | 13500.0 | 0.149001425838470450.127096374034881580.1439235637029012 0.12749630370140075 |
| 27 | 14000.0 | 0.160849219512939460.1325169129371643 0.153664835834503160.13226891839504243 |
| 28 | 14500.0 | 0.170296766090393070.137663060855865470.157260096263885480.13654349303245544 |
| 29 | 15000.0 | 0.167421209621429450.137328238403797150.160569898478190120.13721644899845123 |
| 30 | 15500.0 | 0.171217481136322010.138733598041534430.161318811225891120.138998450756073   |
| 31 | 16000.0 | 0.160308578658103940.133336656379699710.152470474974314370.13327991871833803 |
| 32 | 16500.0 | 0.173064969587326060.142900982332229610.167688233598073330.14395452749729157 |
| 33 | 17000.0 | 0.1737873454809189 0.1430817000389099 0.1695584169705709 0.14383907470703125 |
| 34 | 17500.0 | 0.168363738632202140.141945363020896910.167954569657643630.14154069180488588 |
| 35 | 18000.0 | 0.1654060896873474 0.137090539765357980.160396681594848630.13718517150878906 |
| 36 | 18500.0 | 0.1687333755016327 0.1400412996292114 0.1668409303029378 0.1397867361307144  |
| 37 | 19000.0 | 0.177736423468589780.146050236082077040.1725632208188375 0.1458105377674103  |
| 38 | 19500.0 | 0.18063334660530080.149754585003852860.177664380200703940.14934728991985322  |
| 39 | 20000.0 | 0.1839292300462723 0.151344064950943 0.184595045026143380.15109445390701293  |
| 40 | 20500.0 | 0.210237380433082570.1710455370426178 0.2244414770444234 0.1709217981338501  |
| 41 | 21000.0 | 0.217189096593856820.176588182616233820.2406986110051473 0.1769793394804001  |
| 42 | 21500.0 | 0.218653823995590220.175104448604583740.2475839314778646 0.17496932907104493 |
| 43 | 22000.0 | 0.2180372181415558 0.171758327722549430.2528029303232829 0.1723570785045624  |
| 44 | 22500.0 | 0.220916169309616080.173509487581253060.2613146634101868 0.17347782020568847 |
| 45 | 23000.0 | 0.2168600338459015 0.168925877928733810.2615582206090291 0.16850833179950714 |
| 46 | 23500.0 | 0.218507213163375850.1671652732372284 0.267848113505045560.16840686161518098 |
| 47 | 24000.0 | 0.2239995436668396 0.168128852891922 0.2762859364191691 0.16780311894416808  |
| 48 | 24500.0 | 0.2269480643749237 0.167279207229614260.281064793014526360.16642669796943665 |
| 49 | 25000.0 | 0.2288878088951111 0.165907285165786730.286470137723286940.16671850275993347 |
| 50 | 25500.0 | 0.224180848360061640.163487166404724130.288981764570872 0.1632298985004425   |
| 51 | 26000.0 | 0.2287468637943268 0.162301766824722280.295287568569183370.16273895082473755 |
| 52 | 26500.0 | 0.2226205867767334 0.159063365888595570.2973750435511271 0.1594503559112549  |
| 53 | 27000.0 | 0.2276825448513031 0.1606937440395355 0.307687453842163060.1616117504119873  |

|    |         |                      |                      |                      |                     |  |
|----|---------|----------------------|----------------------|----------------------|---------------------|--|
| 54 | 27500.0 | 0.2308899302482605   | 0.1602754227399826   | 0.3130823220570882   | 0.16059225370883942 |  |
| 55 | 28000.0 | 0.233908310031890860 | 0.159314723253250130 | 0.3153146708170573   | 0.16012243695259093 |  |
| 56 | 28500.0 | 0.226138141155242920 | 0.1554934817314148   | 0.3130262512207031   | 0.1548985955476761  |  |
| 57 | 29000.0 | 0.2298343550682068   | 0.156669661784172050 | 0.3208499942779541   | 0.15625207862854004 |  |
| 58 | 29500.0 | 0.229893828248977670 | 0.153249902486801150 | 0.321716108322143530 | 0.15353055565357207 |  |
| 59 | 30000.0 | 0.2301557647705078   | 0.153593240118026750 | 0.3260994366963704   | 0.15421795439720154 |  |
| 60 | 30500.0 | 0.229369522285461420 | 0.1479925067424774   | 0.347838432375590030 | 0.14888281383514404 |  |
| 61 | 31000.0 | 0.2220026322364807   | 0.143239338731765750 | 0.346913147354126    | 0.143260648727417   |  |
| 62 | 31500.0 | 0.223175630044937120 | 0.142917759847641    | 0.3525645467122396   | 0.1426596711874008  |  |
| 63 | 32000.0 | 0.222005389595031740 | 0.1417056616306305   | 0.3549671579360962   | 0.14297322692871095 |  |
| 64 | 32500.0 | 0.227678476953506460 | 0.143999659216403950 | 0.3639274761835734   | 0.14438085134029388 |  |
| 65 | 33000.0 | 0.226719820404052720 | 0.143963534975051880 | 0.3661342309315999   | 0.14339267582893372 |  |
| 66 | 33500.0 | 0.2260525010585785   | 0.142354351902008070 | 0.3667759688695272   | 0.14205791494846343 |  |
| 67 | 34000.0 | 0.221686283588409420 | 0.1408858284831047   | 0.366936213048299150 | 0.14045401763916016 |  |
| 68 | 34500.0 | 0.227061176013946540 | 0.142090547537803650 | 0.372126102002461770 | 0.14247271336317063 |  |
| 69 | 35000.0 | 0.224034869670867910 | 0.141111160898208630 | 0.371689370727539050 | 0.14128133008480073 |  |
| 70 | 35500.0 | 0.2199693953514099   | 0.137904934883117670 | 0.368129722468058250 | 0.13739953541755676 |  |
| 71 | 36000.0 | 0.224265407180786140 | 0.1405446439385414   | 0.3771417463938395   | 0.1408518592238426  |  |
| 72 | 36500.0 | 0.220530819702148440 | 0.137677761530876160 | 0.3723676077524821   | 0.13644976180791854 |  |
| 73 | 37000.0 | 0.223286623764038070 | 0.1399913874387741   | 0.379608458010355640 | 0.14002909358739854 |  |
| 74 | 37500.0 | 0.223240311145782470 | 0.139054483103752120 | 0.378089019139607740 | 0.13912912364006041 |  |
| 75 | 38000.0 | 0.221811631393432630 | 0.136986081409454340 | 0.3768367619832357   | 0.13693144986629485 |  |
| 76 | 38500.0 | 0.222313942432403570 | 0.137089075994491580 | 0.380473308690389    | 0.13788751987218856 |  |
| 77 | 39000.0 | 0.223380118227005010 | 0.137002683663368240 | 0.3798740125020345   | 0.13609469895362855 |  |

## metadata

|   | epoch  | lr_change_ratio | batch_mean_epsilon | batch_valid_ratio | batch_mean_grad_norm | batch_mean_epsilon |
|---|--------|-----------------|--------------------|-------------------|----------------------|--------------------|
| 0 | 500.0  | 1.0             | -1.0               | -0.0078125        | -1.0                 | -1.0               |
| 1 | 1000.0 | 1.0             | -1.0               | -0.0078125        | -1.0                 | -1.0               |
| 2 | 1500.0 | 1.0             | -1.0               | -0.0078125        | -1.0                 | -1.0               |
| 3 | 2000.0 | 1.0             | -1.0               | -0.0078125        | -1.0                 | -1.0               |
| 4 | 2500.0 | 1.0             | -1.0               | -0.0078125        | -1.0                 | -1.0               |
| 5 | 3000.0 | 1.0             | -1.0               | -0.0078125        | -1.0                 | -1.0               |

|    |         |                     |      |            |      |      |  |
|----|---------|---------------------|------|------------|------|------|--|
| 6  | 3500.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 7  | 4000.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 8  | 4500.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 9  | 5000.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 10 | 5500.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 11 | 6000.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 12 | 6500.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 13 | 7000.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 14 | 7500.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 15 | 8000.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 16 | 8500.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 17 | 9000.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 18 | 9500.0  | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 19 | 10000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 20 | 10500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 21 | 11000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 22 | 11500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 23 | 12000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 24 | 12500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 25 | 13000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 26 | 13500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 27 | 14000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 28 | 14500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 29 | 15000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 30 | 15500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 31 | 16000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 32 | 16500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 33 | 17000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 34 | 17500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 35 | 18000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 36 | 18500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 37 | 19000.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 38 | 19500.0 | 1.0                 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |
| 39 | 20000.0 | 0.10000000000000002 | -1.0 | -0.0078125 | -1.0 | -1.0 |  |

[illegible]

|    |         |                      |            |      |      |
|----|---------|----------------------|------------|------|------|
| 73 | 37000.0 | 0.010000000000000002 | -0.0078125 | -1.0 | -1.0 |
| 74 | 37500.0 | 0.010000000000000002 | -0.0078125 | -1.0 | -1.0 |
| 75 | 38000.0 | 0.010000000000000002 | -0.0078125 | -1.0 | -1.0 |
| 76 | 38500.0 | 0.010000000000000002 | -0.0078125 | -1.0 | -1.0 |
| 77 | 39000.0 | 0.010000000000000002 | -0.0078125 | -1.0 | -1.0 |