Grouped split nomenclature: <Feature> high/low

All data examples with <Feature> in the top 20th (high) or bottom 20th (low) percentile were used as the test data, and all other data examples were used as train/val

Random split information

The random seed affects the train and validation sets. These are shuffled between different seed runs

2-2-2-asym-AB-AC

Grouped split, C1 high

{'batch\_size': 128, 'beta\_1': 0.898758473477427, 'bypass': False, 'decay': 8.134242913564973e-05, 'drop\_rate': 0.000935154644464517, 'hidden\_size': (128, 128, 128), 'lr': 0.0005682432036183244, 'reg': 1.882658885509617e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C1 low

{'batch\_size': 128, 'beta\_1': 0.9626653167829049, 'bypass': True, 'decay': 0.0006701859448141487, 'drop\_rate': 0.38471670993547896, 'hidden\_size': (256, 256, 256), 'lr': 0.0008551682305092606, 'reg': 0.0012749713334765332, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 high

{'batch\_size': 32, 'beta\_1': 0.8843322780469552, 'bypass': False, 'decay': 2.3225509914500813e-05, 'drop\_rate': 0.08125862741644263, 'hidden\_size': (512, 512), 'lr': 0.0009231944516459646, 'reg': 1.3829295648908319e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 low

{'batch\_size': 128, 'beta\_1': 0.8823426257068072, 'bypass': True, 'decay': 0.0022932695357319108, 'drop\_rate': 0.0006331363773735832, 'hidden\_size': (256, 256, 256), 'lr': 0.0009115656614168394, 'reg': 0.00017583975836720352, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C1

{'batch\_size': 64, 'beta\_1': 0.9833259755001406, 'bypass': False, 'decay': 0.0026972201464218535, 'drop\_rate': 0.0001387592764068024, 'hidden\_size': (256, 256, 256), 'lr': 0.0008257464103620247, 'reg': 0.000787059945138855, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C2

{'batch\_size': 64, 'beta\_1': 0.880266137660428, 'bypass': True, 'decay': 0.0004274682817938844, 'drop\_rate': 0.2739836716148819, 'hidden\_size': (256, 256, 256), 'lr': 0.000574862290224356, 'reg': 0.008327566935975332, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C1

{'batch\_size': 128, 'beta\_1': 0.8680165014299741, 'bypass': True, 'decay': 0.0001581308816699713, 'drop\_rate': 0.04341664073401272, 'hidden\_size': (128, 128, 128), 'lr': 0.0008045254289752333, 'reg': 0.03545122888086011, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 1870}

Random split, Seed 1, C2

{'batch\_size': 128, 'beta\_1': 0.8759898225488433, 'bypass': True, 'decay': 0.0005606268133321954, 'drop\_rate': 0.2707788910786222, 'hidden\_size': (256, 256, 256), 'lr': 0.0008234636516905693, 'reg': 0.0005551001144069004, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C1

{'batch\_size': 128, 'beta\_1': 0.980853313505653, 'bypass': False, 'decay': 0.00079901890638257, 'drop\_rate': 0.00048500510195410504, 'hidden\_size': (512, 512, 512), 'lr': 0.00016653525529972986, 'reg': 0.0009089566816816849, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C2

{'batch\_size': 128, 'beta\_1': 0.8726040034669034, 'bypass': False, 'decay': 3.973696599919704e-05, 'drop\_rate': 0.003657441836216163, 'hidden\_size': (512, 512, 512), 'lr': 0.0007384225462305554, 'reg': 1.0086438299302522e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 1384}

Random split, Seed 3, C1

{'batch\_size': 64, 'beta\_1': 0.9533904655603851, 'bypass': True, 'decay': 2.170265925203318e-05, 'drop\_rate': 0.16693619674639007, 'hidden\_size': (256, 256, 256), 'lr': 0.000334578201241421, 'reg': 1.4341475173702864e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C2

{'batch\_size': 256, 'beta\_1': 0.8249854690693181, 'bypass': True, 'decay': 0.005251251637927935, 'drop\_rate': 0.0006186714431465973, 'hidden\_size': (256, 256, 256), 'lr': 0.0008809864965625332, 'reg': 0.00011771705720651025, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C1

{'batch\_size': 64, 'beta\_1': 0.8169731586742532, 'bypass': False, 'decay': 0.0005326111089727879, 'drop\_rate': 0.028269828524843173, 'hidden\_size': (512, 512), 'lr': 0.0007775021980357839, 'reg': 0.0003651039533811019, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C2

{'batch\_size': 128, 'beta\_1': 0.8635899653171584, 'bypass': False, 'decay': 0.005401127655934334, 'drop\_rate': 4.40600902577859e-06, 'hidden\_size': (512, 512, 512), 'lr': 0.0006144972908891514, 'reg': 9.652248155814928e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

2-2-2-semi-asym-AB-AC

Grouped split, C1 high

{'batch\_size': 128, 'beta\_1': 0.8863996952043695, 'bypass': False, 'decay': 0.001870139866685747, 'drop\_rate': 0.00036984062523493086, 'hidden\_size': (512, 512, 512), 'lr': 0.0007482625679843952, 'reg': 6.407074444151439e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C1 low

{'batch\_size': 256, 'beta\_1': 0.8504494752901076, 'bypass': False, 'decay': 0.0003516581931526455, 'drop\_rate': 3.275458427532774e-05, 'hidden\_size': (512, 512, 512), 'lr': 0.0006004556779009109, 'reg': 1.0572415093084162e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 high

{'batch\_size': 128, 'beta\_1': 0.8730174340042279, 'bypass': False, 'decay': 0.0014165746814540185, 'drop\_rate': 0.000989090892742267, 'hidden\_size': (512, 512, 512), 'lr': 0.0005743717499169153, 'reg': 1.3615773640289568e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 low

{'batch\_size': 256, 'beta\_1': 0.8665865996882851, 'bypass': False, 'decay': 0.007363291554062501, 'drop\_rate': 0.0010387636784910462, 'hidden\_size': (512, 512, 512), 'lr': 0.0007990383118339207, 'reg': 3.648104766946419e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C1

{'batch\_size': 128, 'beta\_1': 0.8710065602661438, 'bypass': True, 'decay': 1.8697942204869603e-05, 'drop\_rate': 0.0003894772864563023, 'hidden\_size': (256, 256, 256), 'lr': 0.0005603719423750653, 'reg': 5.9604364041608755e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C2

{'batch\_size': 128, 'beta\_1': 0.879111409775025, 'bypass': True, 'decay': 0.001394042255210334, 'drop\_rate': 0.00016412561823086168, 'hidden\_size': (512, 512, 512), 'lr': 0.0005814785820637004, 'reg': 1.460071471874506e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C1

{'batch\_size': 256, 'beta\_1': 0.9608831336183393, 'bypass': True, 'decay': 0.0019631356180638336, 'drop\_rate': 0.0005200972941911564, 'hidden\_size': (512, 512, 512), 'lr': 0.0005075532961167548, 'reg': 0.0002283618858881806, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C2

{'batch\_size': 128, 'beta\_1': 0.8740581380212926, 'bypass': True, 'decay': 0.0012362778790456516, 'drop\_rate': 0.0009105086001232193, 'hidden\_size': (128, 128, 128), 'lr': 0.0007236518743877802, 'reg': 0.0001116455595592205, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C1

{'batch\_size': 128, 'beta\_1': 0.9157285111139821, 'bypass': False, 'decay': 0.0001906594758097001, 'drop\_rate': 0.0006331363773735832, 'hidden\_size': (128, 128), 'lr': 0.000266184582231738, 'reg': 1.041034022520436e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C2

{'batch\_size': 128, 'beta\_1': 0.8432024110214393, 'bypass': False, 'decay': 0.0006773340933517316, 'drop\_rate': 0.0006016848902313125, 'hidden\_size': (256, 256, 256), 'lr': 0.00024449248335153915, 'reg': 7.422540193390303e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C1

{'batch\_size': 256, 'beta\_1': 0.8497354862288803, 'bypass': False, 'decay': 0.006620920220874233, 'drop\_rate': 0.0004182678120466317, 'hidden\_size': (512, 512, 512), 'lr': 0.0007313983568641455, 'reg': 1.6777615547339983e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C2

{'batch\_size': 256, 'beta\_1': 0.8094162375574783, 'bypass': False, 'decay': 0.004826364000961107, 'drop\_rate': 0.0001790607354486141, 'hidden\_size': (512, 512, 512), 'lr': 0.0007632151949920076, 'reg': 5.772812445154018e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C1

{'batch\_size': 256, 'beta\_1': 0.9251154660559837, 'bypass': False, 'decay': 0.004229226916894634, 'drop\_rate': 0.00010812705478324629, 'hidden\_size': (512, 512, 512), 'lr': 0.0004218552409718122, 'reg': 3.024188246095034e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C2

{'batch\_size': 128, 'beta\_1': 0.8523749422803778, 'bypass': False, 'decay': 1.3157714654570197e-05, 'drop\_rate': 0.22914948867169477, 'hidden\_size': (512, 512), 'lr': 0.0008083326424284054, 'reg': 1.514647614914748e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

4-4-2-asym-AB-AC

Grouped split, C1 high

{'batch\_size': 64, 'beta\_1': 0.9602753494227799, 'bypass': True, 'decay': 0.003603513879516025, 'drop\_rate': 0.000543406461877778, 'hidden\_size': (512, 512, 512), 'lr': 0.00019003628618814462, 'reg': 0.0015862207496848025, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C1 low

{'batch\_size': 128, 'beta\_1': 0.879111409775025, 'bypass': True, 'decay': 0.001394042255210334, 'drop\_rate': 0.00016412561823086168, 'hidden\_size': (512, 512, 512), 'lr': 0.0005814785820637004, 'reg': 1.460071471874506e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 high

{'batch\_size': 128, 'beta\_1': 0.878810951276843, 'bypass': False, 'decay': 0.0004960180179942173, 'drop\_rate': 0.0013196136202149552, 'hidden\_size': (512, 512, 512), 'lr': 0.0005605521940102587, 'reg': 2.9530495894315645e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 low

{'batch\_size': 128, 'beta\_1': 0.9887332760975197, 'bypass': False, 'decay': 0.0008093194972269166, 'drop\_rate': 0.008586060560158731, 'hidden\_size': (512, 512), 'lr': 0.0009362476016951272, 'reg': 7.907606211205626e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C1

{'batch\_size': 128, 'beta\_1': 0.8736739396065458, 'bypass': False, 'decay': 0.0018996669691588746, 'drop\_rate': 0.000989090892742267, 'hidden\_size': (512, 512, 512), 'lr': 0.000577102179069036, 'reg': 1.1559660070091991e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C2

{'batch\_size': 256, 'beta\_1': 0.8595129803841218, 'bypass': False, 'decay': 0.002061029036340659, 'drop\_rate': 0.0024127606637930764, 'hidden\_size': (512, 512, 512), 'lr': 0.0008142416461272256, 'reg': 3.0202730270068073e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C1

{'batch\_size': 128, 'beta\_1': 0.9717412720705182, 'bypass': True, 'decay': 2.773286993067024e-05, 'drop\_rate': 0.05105231531732999, 'hidden\_size': (256, 256), 'lr': 0.0006266710700725763, 'reg': 0.0010314000947147753, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 1103}

Random split, Seed 1, C2

{'batch\_size': 64, 'beta\_1': 0.8298903394634279, 'bypass': False, 'decay': 0.0006739783126253063, 'drop\_rate': 0.30718006609179593, 'hidden\_size': (512, 512), 'lr': 0.0008617140286499123, 'reg': 0.0003492087846130952, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C1

{'batch\_size': 128, 'beta\_1': 0.879111409775025, 'bypass': True, 'decay': 0.001394042255210334, 'drop\_rate': 0.00016412561823086168, 'hidden\_size': (512, 512, 512), 'lr': 0.0005814785820637004, 'reg': 1.460071471874506e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C2

{'batch\_size': 32, 'beta\_1': 0.8389704268455216, 'bypass': True, 'decay': 0.00033340337850510797, 'drop\_rate': 0.10628208236336495, 'hidden\_size': (512, 512), 'lr': 0.00039232909007324993, 'reg': 0.008686756191388534, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C1

{'batch\_size': 128, 'beta\_1': 0.8736739396065458, 'bypass': False, 'decay': 0.0018996669691588746, 'drop\_rate': 0.000989090892742267, 'hidden\_size': (512, 512, 512), 'lr': 0.000577102179069036, 'reg': 1.1559660070091991e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C2

{'batch\_size': 32, 'beta\_1': 0.8193019227068061, 'bypass': True, 'decay': 0.000190120620614086, 'drop\_rate': 0.11299799460873101, 'hidden\_size': (512, 512), 'lr': 0.0005471885380438366, 'reg': 0.0007932753452687663, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C1

{'batch\_size': 128, 'beta\_1': 0.90589318455566, 'bypass': False, 'decay': 0.00025477067849851803, 'drop\_rate': 0.29202369204822304, 'hidden\_size': (512, 512, 512), 'lr': 0.0009264992998349764, 'reg': 2.5650455073714816e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C2

{'batch\_size': 64, 'beta\_1': 0.8201586930610011, 'bypass': True, 'decay': 0.0002544822758677754, 'drop\_rate': 0.26411184996366105, 'hidden\_size': (512, 512), 'lr': 0.0006080376508942173, 'reg': 4.59444669842448e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

4-4-2-semi-asym-AB-AC

Grouped split, C1 high

{'batch\_size': 128, 'beta\_1': 0.894649647006051, 'bypass': False, 'decay': 0.0008460891892062031, 'drop\_rate': 0.0020752153523017464, 'hidden\_size': (512, 512, 512), 'lr': 0.0006073840854218855, 'reg': 0.00013822422962873814, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C1 low

{'batch\_size': 128, 'beta\_1': 0.8917820431840324, 'bypass': True, 'decay': 0.01930784330628419, 'drop\_rate': 0.0007892649110337411, 'hidden\_size': (512, 512, 512), 'lr': 0.0007429098563179282, 'reg': 4.586150080722635e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 high

{'batch\_size': 128, 'beta\_1': 0.8730174340042279, 'bypass': False, 'decay': 0.0014165746814540185, 'drop\_rate': 0.000989090892742267, 'hidden\_size': (512, 512, 512), 'lr': 0.0005743717499169153, 'reg': 1.3615773640289568e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 low

{'batch\_size': 128, 'beta\_1': 0.892825213246347, 'bypass': True, 'decay': 0.0016915823932072015, 'drop\_rate': 0.0002641152293245335, 'hidden\_size': (512, 512, 512), 'lr': 0.0005628299618324758, 'reg': 1.0592998433134385e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C1

{'batch\_size': 128, 'beta\_1': 0.9099886774707074, 'bypass': False, 'decay': 0.00046712598990252875, 'drop\_rate': 0.0012448251242722572, 'hidden\_size': (256, 256, 256), 'lr': 0.0005711664903445334, 'reg': 1.0086462557130839e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C2

{'batch\_size': 256, 'beta\_1': 0.8665865996882851, 'bypass': False, 'decay': 0.007363291554062501, 'drop\_rate': 0.0010387636784910462, 'hidden\_size': (512, 512, 512), 'lr': 0.0007990383118339207, 'reg': 3.648104766946419e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C1

{'batch\_size': 128, 'beta\_1': 0.894649647006051, 'bypass': False, 'decay': 0.0008460891892062031, 'drop\_rate': 0.0020752153523017464, 'hidden\_size': (512, 512, 512), 'lr': 0.0006073840854218855, 'reg': 0.00013822422962873814, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C2

{'batch\_size': 128, 'beta\_1': 0.966224365891635, 'bypass': False, 'decay': 0.0008598432695621188, 'drop\_rate': 0.0016161639876270406, 'hidden\_size': (512, 512, 512), 'lr': 0.000982049392737491, 'reg': 1.9593588135237865e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C1

{'batch\_size': 256, 'beta\_1': 0.9549917708925877, 'bypass': True, 'decay': 0.0005713586737333593, 'drop\_rate': 0.005288821671011745, 'hidden\_size': (512, 512), 'lr': 0.00015682193253724233, 'reg': 1.2790662341427023e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C2

{'batch\_size': 256, 'beta\_1': 0.8508336163621578, 'bypass': False, 'decay': 2.3181417044804785e-05, 'drop\_rate': 0.0006331363773735832, 'hidden\_size': (128, 128), 'lr': 0.0003537691637311022, 'reg': 3.139100787046395e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C1

{'batch\_size': 128, 'beta\_1': 0.9058863465508712, 'bypass': True, 'decay': 0.003587990315262518, 'drop\_rate': 0.0009467532199789692, 'hidden\_size': (512, 512, 512), 'lr': 0.000550553299644711, 'reg': 4.1650304715043036e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C2

{'batch\_size': 128, 'beta\_1': 0.8939459408151825, 'bypass': False, 'decay': 0.006641390130596393, 'drop\_rate': 0.0002641152293245335, 'hidden\_size': (512, 512, 512), 'lr': 0.0005977599341912573, 'reg': 1.0014569225266919e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C1

{'batch\_size': 256, 'beta\_1': 0.8094162375574783, 'bypass': False, 'decay': 0.004826364000961107, 'drop\_rate': 0.0001790607354486141, 'hidden\_size': (512, 512, 512), 'lr': 0.0007632151949920076, 'reg': 5.772812445154018e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C2

{'batch\_size': 256, 'beta\_1': 0.8538050029063615, 'bypass': True, 'decay': 0.0004872365718571029, 'drop\_rate': 0.0007946215695902863, 'hidden\_size': (512, 512), 'lr': 0.0004795241943206336, 'reg': 2.298039419098701e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

10-10-2-asym-AB-AC

Grouped split, C1 high

{'batch\_size': 64, 'beta\_1': 0.9765938429051932, 'bypass': True, 'decay': 0.0015240480352768293, 'drop\_rate': 0.10320073872818242, 'hidden\_size': (128, 128, 128), 'lr': 0.000803343339795283, 'reg': 0.09151131057572424, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C1 low

{'batch\_size': 32, 'beta\_1': 0.8734702657257969, 'bypass': True, 'decay': 0.0008836012815422864, 'drop\_rate': 0.24434471594706436, 'hidden\_size': (128, 128, 128), 'lr': 0.0001680636065709954, 'reg': 0.04161536208011936, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 high

{'batch\_size': 64, 'beta\_1': 0.9348526705817387, 'bypass': True, 'decay': 0.000573878216039895, 'drop\_rate': 0.3065247019309478, 'hidden\_size': (512, 512, 512), 'lr': 0.0004576383990034642, 'reg': 0.006113257965754987, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 1990}

Grouped split, C2 low

{'batch\_size': 128, 'beta\_1': 0.8947340906797253, 'bypass': True, 'decay': 0.0022746772670900165, 'drop\_rate': 8.967762712619454e-05, 'hidden\_size': (256, 256, 256), 'lr': 0.0008513628483320674, 'reg': 0.002399283591529366, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C1

{'batch\_size': 16, 'beta\_1': 0.9351245359898509, 'bypass': True, 'decay': 0.00017261695219870845, 'drop\_rate': 0.18075282223975822, 'hidden\_size': (128, 128, 128), 'lr': 0.0005581736431228345, 'reg': 0.0011653339672884216, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C2

{'batch\_size': 128, 'beta\_1': 0.9330021938142312, 'bypass': True, 'decay': 0.00021068369334335395, 'drop\_rate': 0.06684723154056901, 'hidden\_size': (128, 128), 'lr': 0.00043080630877733903, 'reg': 0.0006642787855923107, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C1

{'batch\_size': 64, 'beta\_1': 0.8424625900264384, 'bypass': True, 'decay': 0.0002917061652881022, 'drop\_rate': 0.31316247245962575, 'hidden\_size': (128, 128, 128), 'lr': 0.0007597795086828744, 'reg': 0.0009998626603888183, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C2

{'batch\_size': 128, 'beta\_1': 0.8959353275218019, 'bypass': True, 'decay': 0.00104552590226275, 'drop\_rate': 1.661688622031643e-05, 'hidden\_size': (512, 512, 512), 'lr': 0.0005645586256489422, 'reg': 1.3803444719851685e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C1

{'batch\_size': 32, 'beta\_1': 0.9352538414988938, 'bypass': True, 'decay': 0.005865186662781077, 'drop\_rate': 0.017381262807015796, 'hidden\_size': (128, 128, 128), 'lr': 0.0009998551596421, 'reg': 0.12419673192853797, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C2

{'batch\_size': 128, 'beta\_1': 0.8959353275218019, 'bypass': True, 'decay': 0.00104552590226275, 'drop\_rate': 1.661688622031643e-05, 'hidden\_size': (512, 512, 512), 'lr': 0.0005645586256489422, 'reg': 1.3803444719851685e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C1

{'batch\_size': 32, 'beta\_1': 0.8588232731399555, 'bypass': True, 'decay': 0.0012507065983220899, 'drop\_rate': 0.3068543706954504, 'hidden\_size': (256, 256), 'lr': 0.000751992302281803, 'reg': 0.004817632166525802, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C2

{'batch\_size': 32, 'beta\_1': 0.9243050857018855, 'bypass': True, 'decay': 0.001448176580499403, 'drop\_rate': 0.0007215704299004463, 'hidden\_size': (512, 512, 512), 'lr': 0.0007723851264225862, 'reg': 0.0005379100956282386, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C1

{'batch\_size': 64, 'beta\_1': 0.8716839437981585, 'bypass': True, 'decay': 0.0007305528758464123, 'drop\_rate': 0.28155615755561825, 'hidden\_size': (128, 128), 'lr': 0.0006149808451641928, 'reg': 0.0001511366932404485, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C2

{'batch\_size': 32, 'beta\_1': 0.9221195821098237, 'bypass': True, 'decay': 0.00015585901378714176, 'drop\_rate': 0.09213961885805233, 'hidden\_size': (512, 512), 'lr': 0.00016915373856286444, 'reg': 0.02565303756394458, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

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Grouped split, C1 high

{'batch\_size': 128, 'beta\_1': 0.923511614004992, 'bypass': True, 'decay': 1.5438173228353235e-05, 'drop\_rate': 0.056801308593479455, 'hidden\_size': (128, 128, 128), 'lr': 0.0005555570789547231, 'reg': 2.256326380841779e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C1 low

{'batch\_size': 64, 'beta\_1': 0.8448407263874217, 'bypass': True, 'decay': 0.004182410985381075, 'drop\_rate': 0.037216331555012416, 'hidden\_size': (128, 128, 128), 'lr': 0.0006222287087976715, 'reg': 0.07098078570346802, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 high

{'batch\_size': 32, 'beta\_1': 0.8022209034537526, 'bypass': True, 'decay': 0.0002800534178409182, 'drop\_rate': 0.1842575804321135, 'hidden\_size': (256, 256, 256), 'lr': 0.0006741227485381426, 'reg': 0.000687479798043824, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 low

{'batch\_size': 256, 'beta\_1': 0.9136675905261222, 'bypass': True, 'decay': 2.8050034270271036e-05, 'drop\_rate': 0.0007887875192987143, 'hidden\_size': (512, 512), 'lr': 0.00011939631918456861, 'reg': 1.5052785185172239e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C1

{'batch\_size': 64, 'beta\_1': 0.8791363555815828, 'bypass': True, 'decay': 0.0008461169865274179, 'drop\_rate': 0.36926490903456377, 'hidden\_size': (128, 128, 128), 'lr': 0.0006392248772073874, 'reg': 0.006180060001931762, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C2

{'batch\_size': 64, 'beta\_1': 0.9213267241016738, 'bypass': True, 'decay': 0.001556056129495513, 'drop\_rate': 0.03556604230235575, 'hidden\_size': (128, 128), 'lr': 0.0007422320058918669, 'reg': 0.02252241008375478, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C1

{'batch\_size': 128, 'beta\_1': 0.8638319807053741, 'bypass': True, 'decay': 0.0004980089812690107, 'drop\_rate': 0.08146484359943187, 'hidden\_size': (256, 256), 'lr': 0.0009992564535683396, 'reg': 0.00010714927588170173, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C2

{'batch\_size': 16, 'beta\_1': 0.8496463868344803, 'bypass': True, 'decay': 0.00010158790319774704, 'drop\_rate': 0.00207117822602107, 'hidden\_size': (256, 256), 'lr': 0.0005690378907639978, 'reg': 0.0005924629356811108, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C1

{'batch\_size': 128, 'beta\_1': 0.869338021119154, 'bypass': True, 'decay': 0.010158917613676348, 'drop\_rate': 0.026206267084746885, 'hidden\_size': (512, 512), 'lr': 0.00030763189193030636, 'reg': 0.0633358501379451, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C2

{'batch\_size': 64, 'beta\_1': 0.9010186347550051, 'bypass': True, 'decay': 0.0009841596043579728, 'drop\_rate': 0.10481627149159586, 'hidden\_size': (256, 256, 256), 'lr': 0.0006122285176568302, 'reg': 0.007560336603466493, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C1

{'batch\_size': 64, 'beta\_1': 0.9896098964408103, 'bypass': True, 'decay': 5.735272852043823e-05, 'drop\_rate': 0.08748004031395328, 'hidden\_size': (128, 128, 128), 'lr': 0.0004923485693007644, 'reg': 1.003295134477348e-05, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C2

{'batch\_size': 128, 'beta\_1': 0.8874830289538876, 'bypass': True, 'decay': 0.001535303046484655, 'drop\_rate': 0.0838973152836368, 'hidden\_size': (128, 128, 128), 'lr': 0.0008535620703843805, 'reg': 0.00025854232922895964, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C1

{'batch\_size': 128, 'beta\_1': 0.8565030673389592, 'bypass': True, 'decay': 0.0103565875316122, 'drop\_rate': 0.19553945595737277, 'hidden\_size': (256, 256, 256), 'lr': 0.0008585846141182536, 'reg': 0.5602348060423885, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C2

{'batch\_size': 32, 'beta\_1': 0.9221195821098237, 'bypass': True, 'decay': 0.00015585901378714176, 'drop\_rate': 0.09213961885805233, 'hidden\_size': (512, 512), 'lr': 0.00016915373856286444, 'reg': 0.02565303756394458, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

20-20-2-asym-AB-AC

Grouped split, C1 high

{'batch\_size': 64, 'beta\_1': 0.9311913125946029, 'bypass': True, 'decay': 0.00018063727520073092, 'drop\_rate': 0.21072010413094577, 'hidden\_size': (128, 128, 128), 'lr': 0.0003424049441761517, 'reg': 0.0013993427247222206, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C1 low

{'batch\_size': 64, 'beta\_1': 0.9504187573776214, 'bypass': True, 'decay': 0.0009143143839982067, 'drop\_rate': 0.1551991523488887, 'hidden\_size': (256, 256), 'lr': 0.00048037999407174177, 'reg': 0.0018324113715586727, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Grouped split, C2 high

{'batch\_size': 64, 'beta\_1': 0.9654204167885498, 'bypass': True, 'decay': 0.0006598516708066484, 'drop\_rate': 0.35675919406666323, 'hidden\_size': (256, 256, 256), 'lr': 0.0007160379682119738, 'reg': 0.06060763314429768, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 631}

Grouped split, C2 low

{'batch\_size': 64, 'beta\_1': 0.9627578792194654, 'bypass': True, 'decay': 0.0011463099863013495, 'drop\_rate': 0.03625368536890355, 'hidden\_size': (256, 256, 256), 'lr': 0.0004466984912170045, 'reg': 0.00679955606675535, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C1

{'batch\_size': 64, 'beta\_1': 0.9855282558563843, 'bypass': True, 'decay': 0.00018550133167000708, 'drop\_rate': 0.0007596109891309735, 'hidden\_size': (512, 512, 512), 'lr': 0.0009939304400956275, 'reg': 0.00019035799511827432, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 0, C2

{'batch\_size': 64, 'beta\_1': 0.9059496609606658, 'bypass': True, 'decay': 0.000282598767878021, 'drop\_rate': 0.04562151939165508, 'hidden\_size': (256, 256, 256), 'lr': 0.00032393698079180426, 'reg': 0.00023624626779571322, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C1

{'batch\_size': 256, 'beta\_1': 0.8322400149774638, 'bypass': True, 'decay': 0.00014945898403586654, 'drop\_rate': 0.016167825685082224, 'hidden\_size': (256, 256), 'lr': 0.0009699082024593455, 'reg': 2.327823406987147e-05, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 1, C2

{'batch\_size': 128, 'beta\_1': 0.8899434341455987, 'bypass': True, 'decay': 0.0013941655823577713, 'drop\_rate': 0.36760669764064324, 'hidden\_size': (256, 256), 'lr': 0.0005719925284060751, 'reg': 0.023638733624489226, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C1

{'batch\_size': 128, 'beta\_1': 0.9271364551460043, 'bypass': True, 'decay': 0.001301952398042691, 'drop\_rate': 0.001598701504031708, 'hidden\_size': (128, 128, 128), 'lr': 0.0009939257583066131, 'reg': 0.004629121752659313, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 2, C2

{'batch\_size': 64, 'beta\_1': 0.8257281647711621, 'bypass': True, 'decay': 3.616881598289659e-05, 'drop\_rate': 0.43158567367193285, 'hidden\_size': (128, 128), 'lr': 0.0009641001450026973, 'reg': 0.0003764899371719764, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 1673}

Random split, Seed 3, C1

{'batch\_size': 128, 'beta\_1': 0.9803561478494855, 'bypass': True, 'decay': 0.0020347988810250042, 'drop\_rate': 0.35890368713040466, 'hidden\_size': (256, 256, 256), 'lr': 0.0009944585133483848, 'reg': 0.00536438994970704, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 3, C2

{'batch\_size': 64, 'beta\_1': 0.8742562330694016, 'bypass': True, 'decay': 0.004849769443701105, 'drop\_rate': 0.213349118650615, 'hidden\_size': (512, 512, 512), 'lr': 0.0006809751665509089, 'reg': 0.5319499110262452, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C1

{'batch\_size': 128, 'beta\_1': 0.8191454542377296, 'bypass': True, 'decay': 0.0006560317681763823, 'drop\_rate': 0.14462383243767724, 'hidden\_size': (128, 128), 'lr': 0.00045253438089788787, 'reg': 0.013521382617410642, 'res': True, 'amsgrad': True, 'patience': 100, 'epochs': 2000}

Random split, Seed 4, C2

{'batch\_size': 128, 'beta\_1': 0.8907909191063751, 'bypass': True, 'decay': 0.0010320192569999325, 'drop\_rate': 0.09309455624902793, 'hidden\_size': (512, 512, 512), 'lr': 0.0008624947211315635, 'reg': 0.00198640494370539, 'res': False, 'amsgrad': True, 'patience': 100, 'epochs': 2000}