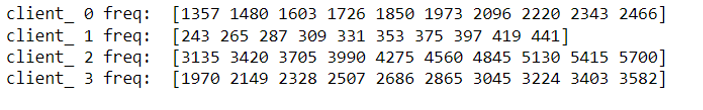
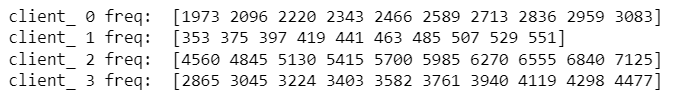
Client frequencies:



|  |  |  |
| --- | --- | --- |
|  | Accuracy | Loss |
| Norm |  |  |
| Gamma |  |  |
| Lognorm |  |  |
| Beta |  |  |
| Burr |  |  |

**NON\_IID DISTRIBUTIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| Distribution | frequency | accuracy | Loss |
| Gamma |  |  |  |
| Norm |  |  |  |
| Lognorm |  |  |  |
| Beta |  |  |  |
| Burr |  |  |  |

**Single-Batch Distributions**

**client\_ 0**

loss: [0.04675943 0.22334448 0.3253662 0.3327828 0.32753864 0.30964363 0.30064547 0.2881389 0.30844659 0.29107651]

freq: [7895 7895 7895 7895 7895 7895 7895 7895 7895 7895]

acc [0.99366689 0.91247624 0.87321091 0.86865103 0.87473083 0.8781507 0.88081062 0.88777709 0.87941736 0.88448387]

**client\_ 1**

loss: [0.44730943 1.00544584 1.24900603 1.09015918 1.2009567 1.20884359 1.11642206 1.12442636 1.07541847 1.10691833]

freq: [1435 1435 1435 1435 1435 1435 1435 1435 1435 1435]

acc [0.89128917 0.49756098 0.37770036 0.50522649 0.44808361 0.43135887 0.47804877 0.47456446 0.50662023 0.48989546]

**client\_ 2**

loss: [0.03972216 0.02067855 0.01909248 0.02059607 0.02184644 0.02210405 0.0240159 0.02484704 0.02478325 0.02511534]

freq: [18259 18259 18259 18259 18259 18259 18259 18259 18259 18259]

acc [0.99611151 0.99989045 1. 1. 1. 0.99994522 0.99994522 0.99989045 0.99989045 0.99994522]

**client\_ 3**

loss: [0.10719391 0.02389912 0.0262641 0.02447494 0.02615622 0.02859946 0.0283988 0.02978892 0.03104771 0.03117665]

freq: [11484 11484 11484 11484 11484 11484 11484 11484 11484 11484]

acc [0.98885405 0.99965167 0.99982584 0.99991292 0.99991292 0.99991292 0.99982584 0.99982584 0.99973875 0.99973875]

|  |  |  |
| --- | --- | --- |
| Distribution | Accuracy | Loss |
| Gamma | 0 and 1 5052963785.6386385  0 and 2 110213288418.12776  0 and 3 107785490295.07877  1 and 2 105160324655.85822  1 and 3 102732526518.81839  2 and 3 2427798137.039818  0 and global: 2170527.9642331777  1 and global: 5050793767.680869  2 and global: 110211118394.07294  3 and global: 107783320275.70663 | 0 and 1 9.308714649162779  0 and 2 11341.601002166437  0 and 3 4854633.798060776  1 and 2 11337.843632987884  1 and 3 4854630.040691596  2 and 3 4843350.173976158  0 and global: 6.269837293033752  1 and global: 13.414506742209406  2 and global: 11335.51733712475  3 and global: 4854628.48416662 |
| Norm | 0 and 1 6.675711374677921  0 and 2 286.15857542033956  0 and 3 94.18641588484508  1 and 2 292.8342867950175  1 and 3 100.86212725952299  2 and 3 191.97215953549448  0 and global: 1091.4961367516255  1 and global: 1098.1718481263035  2 and global: 805.337561331286  3 and global: 997.3097208667805 | 0 and 1 2.4057410423621155  0 and 2 54.555577640223106  0 and 3 10.220130044593963  1 and 2 56.96131868258523  1 and 3 12.62587108695608  2 and 3 44.33544759562915  0 and global: 6.002736887598183  1 and global: 8.408477929960299  2 and global: 49.369079300209755  3 and global: 5.281169731086335 |
| Lognorm | 0 and 1 20.848571350665924  0 and 2 68.43472489365098  0 and 3 78.13086556288947  1 and 2 89.2832962443169  1 and 3 98.97943691355539  2 and 3 84.68423389603093  0 and global: 1078.2990797532764  1 and global: 1099.1476511039423  2 and global: 1015.7192759065204  3 and global: 1000.1682141903868 | 0 and 1 2.396580615537854  0 and 2 88.29790770059965  0 and 3 79.39303651314505  1 and 2 90.69448831613751  1 and 3 81.7896171286829  2 and 3 32.77755483496762  0 and global: 6.029857038491165  1 and global: 8.426437654029018  2 and global: 82.74258355514098  3 and global: 74.39622381424006 |
| Beta | 0 and 1 1521748664975.6758  0 and 2 210969340692530.25  0 and 3 30110798953388.42  1 and 2 212491089357505.84  1 and 3 31632547618362.84  2 and 3 180858541739143.1  0 and global: 308744075720725.44  1 and global: 310265824385701.06  2 and global: 385995910701328.75  3 and global: 325709730121620.6 | 0 and 1 2314866766485.9023  0 and 2 10624594890126.223  0 and 3 4839861950005.761  1 and 2 12939461656612.125  1 and 3 7154728716486.841  2 and 3 5784732940125.554  0 and global: 4391291160872.917  1 and global: 2076424394391.9973  2 and global: 15015886050987.99  3 and global: 9231153110878.678 |
| Burr | 0 and 1 12.557451473326129  0 and 2 73.81034375812625  0 and 3 58.98077024145226  1 and 2 86.36779523145239  1 and 3 71.5382217147784  2 and 3 14.82957351667399  0 and global: 37.68286544026416  1 and global: 50.24031691359029  2 and global: 36.12747831786209  3 and global: 30.816360768026254 | 0 and 1 5.9800054838741215  0 and 2 85.11174054509708  0 and 3 14009025718706.021  1 and 2 91.09174602897119  1 and 3 14009025718712.0  2 and 3 14009025718739.184  0 and global: 2.2096049476649746  1 and global: 7.564232292959562  2 and global: 83.77601115000714  3 and global: 14009025718705.12 |