CMV hyperparameters for all experiments

For All Experiments: inverse hyperbolic sine function with a cofactor of 5 for data generation

CellCnn original:

ADAM, lr=0.01, 20 epochs, 8 filters, 100%pooling

Local CellCnn (same as dist settings, averaged)

Distributed

NHOSTS=2

//number of hosts  
var Hosts = 2  
  
//folder of the data, datafolder is for test/valid sets and split data is for splitted dataset  
var DataFolder = "../../cellCNNClear/data/cellCNN/originalNK/"  
var SplitDataFolder = "../../cellCNNClear/data/cellCNN/splitNK/"  
  
//Max number of max cells for  
//all cell prediction (output of preprocessing)  
var TestAllCells = 5652  
  
// Number of samples per batch  
// MUST BE AN EVEN NUMBER  
var BatchSize = 100  
  
// number of samples  
// MUST BE AN EVEN NUMBER  
var Samples = 2000  
  
//number of distributed samples (per-host)  
var NSamplesDist = 1000  
var TypeData = 1 // set to one only when NINDC or RRMS test

// number of cells per sample  
// MUST BE AN EVEN NUMBER  
var Cells = 200  
  
// number of features  
// MUST BE AN EVEN NUMBER  
var Features = 37  
  
//Number of donors in the test cohort  
var TestSamples = 6  
// number of filters  
// MUST BE AN EVEN NUMBER  
var Filters = 8  
  
// number of classes  
var Classes = 2  
  
// learning rate  
var LearningRate = 0.025  
  
// momentum  
var Momentum = 0.9  
  
//epochs  
var Epochs = 20  
  
// ring dimension  
var LogN = 15  
  
var LogSlots = LogN - 1  
  
var Scale = float64(1 << 52)  
  
// Total number of levels  
var Levels = 10  
  
// number of special primes for the key-switching  
var NbPi = 2

2 : cnn\_enc\_split\_test.go:179 (decentralized\_test.RunCnnEncTest) - accuracy: 83.33

2 : cnn\_enc\_split\_test.go:180 (decentralized\_test.RunCnnEncTest) - precision: 66.67

2 : cnn\_enc\_split\_test.go:181 (decentralized\_test.RunCnnEncTest) - recall: 100.00

2 : cnn\_enc\_split\_test.go:182 (decentralized\_test.RunCnnEncTest) - fscore: 80.00

2 : cnn\_enc\_split\_test.go:184 (decentralized\_test.RunCnnEncTest) - Multi-cell test data results:

2 : cnn\_enc\_split\_test.go:186 (decentralized\_test.RunCnnEncTest) - accuracy: 86.95

2 : cnn\_enc\_split\_test.go:187 (decentralized\_test.RunCnnEncTest) - precision: 80.02

2 : cnn\_enc\_split\_test.go:188 (decentralized\_test.RunCnnEncTest) - recall: 98.50

2 : cnn\_enc\_split\_test.go:189 (decentralized\_test.RunCnnEncTest) - fscore: 88.30

NHOSTS=3

//number of hosts  
var Hosts = 3  
  
//folder of the data, datafolder is for test/valid sets and split data is for splitted dataset  
var DataFolder = "../../cellCNNClear/data/cellCNN/originalNK/"  
var SplitDataFolder = "../../cellCNNClear/data/cellCNN/splitNK/"  
  
//Max number of max cells for  
//all cell prediction (output of preprocessing)  
var TestAllCells = 5652  
  
// Number of samples per batch  
// MUST BE AN EVEN NUMBER  
var BatchSize = 64  
  
// number of samples  
// MUST BE AN EVEN NUMBER  
var Samples = 2000  
  
//number of distributed samples (per-host)  
var NSamplesDist = 664  
var TypeData = 1 // set to one only when NINDC or RRMS test

// number of cells per sample  
// MUST BE AN EVEN NUMBER  
var Cells = 200  
  
// number of features  
// MUST BE AN EVEN NUMBER  
var Features = 37  
  
//Number of donors in the test cohort  
var TestSamples = 6  
// number of filters  
// MUST BE AN EVEN NUMBER  
var Filters = 8  
  
// number of classes  
var Classes = 2  
  
// learning rate  
var LearningRate = 0.001  
  
// momentum  
var Momentum = 0.7  
  
//epochs  
var Epochs = 20  
  
// ring dimension  
var LogN = 15  
  
var LogSlots = LogN - 1  
  
var Scale = float64(1 << 52)  
  
// Total number of levels  
var Levels = 10  
  
// number of special primes for the key-switching  
var NbPi = 2

NHOSTS=4

//number of hosts  
var Hosts = 4  
  
//folder of the data, datafolder is for test/valid sets and split data is for splitted dataset  
var DataFolder = "../../cellCNNClear/data/cellCNN/originalNK/"  
var SplitDataFolder = "../../cellCNNClear/data/cellCNN/splitNK/"  
  
//Max number of max cells for  
//all cell prediction (output of preprocessing)  
var TestAllCells = 5652  
var TypeData = 1 // set to one only when NINDC or RRMS test

// Number of samples per batch  
// MUST BE AN EVEN NUMBER  
var BatchSize = 50  
  
// number of test samples  
// MUST BE AN EVEN NUMBER  
var Samples = 2000  
  
//number of distributed training samples (per-host)  
var NSamplesDist = 500  
  
// number of cells per sample  
// MUST BE AN EVEN NUMBER  
var Cells = 200  
  
// number of features  
// MUST BE AN EVEN NUMBER  
var Features = 37  
  
//Number of donors in the test cohort  
var TestSamples = 6  
// number of filters  
// MUST BE AN EVEN NUMBER  
var Filters = 8  
  
// number of classes  
var Classes = 2  
  
// learning rate  
var LearningRate = 0.003  
  
// momentum  
var Momentum = 0.6  
  
//epochs  
var Epochs = 20  
  
// ring dimension  
var LogN = 15  
  
var LogSlots = LogN - 1  
  
var Scale = float64(1 << 52)  
  
// Total number of levels  
var Levels = 10  
  
// number of special primes for the key-switching  
var NbPi = 2

NHOSTS=5

//number of hosts  
var Hosts = 5  
  
//folder of the data, datafolder is for test/valid sets and split data is for splitted dataset  
var DataFolder = "../../cellCNNClear/data/cellCNN/originalNK/"  
var SplitDataFolder = "../../cellCNNClear/data/cellCNN/splitNK/"  
  
//Max number of max cells for  
//all cell prediction (output of preprocessing)  
var TestAllCells = 5652  
  
// Number of samples per batch  
// MUST BE AN EVEN NUMBER  
var BatchSize = 40  
  
// number of test samples  
// MUST BE AN EVEN NUMBER  
var Samples = 2000  
  
//number of distributed training samples (per-host)  
var NSamplesDist = 400  
  
// number of cells per sample  
// MUST BE AN EVEN NUMBER  
var Cells = 200  
  
// number of features  
// MUST BE AN EVEN NUMBER  
var Features = 37  
  
//Number of donors in the test cohort  
var TestSamples = 6  
// number of filters  
// MUST BE AN EVEN NUMBER  
var Filters = 8  
  
// number of classes  
var Classes = 2  
var TypeData = 1 // set to one only when NINDC or RRMS test

// learning rate  
var LearningRate = 0.0045  
  
// momentum  
var Momentum = 0.7  
  
//epochs  
var Epochs = 20  
  
// ring dimension  
var LogN = 15  
  
var LogSlots = LogN - 1  
  
var Scale = float64(1 << 52)  
  
// Total number of levels  
var Levels = 10

2 : cnn\_enc\_split\_test.go:178 (decentralized\_test.RunCnnEncTest) - All test data results:

2 : cnn\_enc\_split\_test.go:179 (decentralized\_test.RunCnnEncTest) - accuracy: 83.33

2 : cnn\_enc\_split\_test.go:180 (decentralized\_test.RunCnnEncTest) - precision: 100.00

2 : cnn\_enc\_split\_test.go:181 (decentralized\_test.RunCnnEncTest) - recall: 50.00

2 : cnn\_enc\_split\_test.go:182 (decentralized\_test.RunCnnEncTest) - fscore: 66.67

2 : cnn\_enc\_split\_test.go:184 (decentralized\_test.RunCnnEncTest) - Multi-cell test data results:

2 : cnn\_enc\_split\_test.go:186 (decentralized\_test.RunCnnEncTest) - accuracy: 83.20

2 : cnn\_enc\_split\_test.go:187 (decentralized\_test.RunCnnEncTest) - precision: 96.11

2 : cnn\_enc\_split\_test.go:188 (decentralized\_test.RunCnnEncTest) - recall: 69.20

2 : cnn\_enc\_split\_test.go:189 (decentralized\_test.RunCnnEncTest) - fscore: 80.47