step\_size = 0.0001

batch\_size = 200

max\_epochs = 200

Graphical user interface, text, application

Description automatically generated

step\_size = 5

batch\_size = 200

max\_epochs = 200

Chart

Description automatically generated

step\_size = 10

batch\_size = 200

max\_epochs = 200

Graphical user interface, application

Description automatically generated

# 4

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(102)

step\_size = .01

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 5

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "Sigmoid"

2021-11-06 20:55:41 INFO [Epoch 199] Loss: 2.292 Train Acc: 15.68% Val Acc: 16.4%

A picture containing graphical user interface

Description automatically generated

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(102)

step\_size = .1

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 5

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "Sigmoid"

2021-11-06 20:56:44 INFO [Epoch 199] Loss: 0.6182 Train Acc: 86.0% Val Acc: 85.5%

Chart, line chart

Description automatically generated

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(102)

step\_size = .01

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 5

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "ReLU" if False else "Sigmoid"

A picture containing graphical user interface

Description automatically generated

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(10)

step\_size = .01

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 2

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "ReLU" if False else "Sigmoid"

2021-11-06 21:08:28 INFO [Epoch 199] Loss: 0.6715 Train Acc: 85.66% Val Acc: 88.4%

Diagram

Description automatically generated with low confidence

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(1000)

step\_size = .01

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 2

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "ReLU" if False else "Sigmoid"

2021-11-06 21:09:15 INFO [Epoch 199] Loss: 0.6745 Train Acc: 86.52% Val Acc: 89.0%

A picture containing line chart

Description automatically generated

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(552)

step\_size = .01

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 2

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "ReLU" if False else "Sigmoid"

2021-11-06 21:10:11 INFO [Epoch 199] Loss: 0.6597 Train Acc: 86.42% Val Acc: 87.8%

A picture containing diagram

Description automatically generated

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(12345)

step\_size = .01

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 2

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "ReLU" if False else "Sigmoid"

2021-11-06 21:10:58 INFO [Epoch 199] Loss: 0.654 Train Acc: 87.14% Val Acc: 88.3%

A picture containing line chart

Description automatically generated

# GLOBAL PARAMETERS FOR STOCHASTIC GRADIENT DESCENT

np.random.seed(98765)

step\_size = .01

batch\_size = 200

max\_epochs = 200

# GLOBAL PARAMETERS FOR NETWORK ARCHITECTURE

number\_of\_layers = 2

width\_of\_layers = 16 # only matters if number of layers > 1

activation = "ReLU" if False else "Sigmoid"

2021-11-06 21:12:31 INFO [Epoch 199] Loss: 0.6629 Train Acc: 86.66% Val Acc: 88.8%

A picture containing diagram

Description automatically generated