GRU_10_FOLD_CROSS_VALIDATION_UNIQUE_DATASET

December 12, 2018

In [0]:
```
# GRU 10 FOLD CROSS VALIDATION ON UNIQUE DATASET (based on model 'gru_8_unique'):
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# Courtesy: https://github.com/mchablani/deep-learning/blob/master/sentiment-rnn/Senti
```

In [0]:
```
import numpy as np
import tensorflow as tf
from timeit import default_timer as timer
from collections import Counter
from string import punctuation
from google.colab import files
```

In [0]:
```
gru_size = 512
gru_layers = 5
k = 10
batch_size = 5
learning_rate = 0.0001
epochs = 3
```

In [4]:
```
fileName = "gru_10_fold_cross_validation_13"
checkpointName = "checkpoints/"+fileName+".ckpt"
print(checkpointName)
print(type(checkpointName))
```

```
checkpoints/gru_10_fold_cross_validation_13.ckpt
<class 'str'>
```

In [5]:
```
files.upload()
files.upload()

with open('data_all_unique_dnd_stratified_text.txt', 'r', encoding="utf8") as f:
    tweets = f.read()
with open('data_all_unique_dnd_stratified_labels.txt', 'r', encoding="utf8") as f:
    labels_org = f.read()

print('File upload done!')
```

```
<IPython.core.display.HTML object>


Saving data_all_unique_dnd_stratified_text.txt to data_all_unique_dnd_stratified_text.txt


<IPython.core.display.HTML object>


Saving data_all_unique_dnd_stratified_labels.txt to data_all_unique_dnd_stratified_labels.txt
File upload done!
```

```
In [0]: # Data preprocessing::
        #all_text = ''.join([c for c in tweets if c not in punctuation])
        all_text = ''.join([c for c in tweets])
        tweets = all_text.split('\n')

        all_text = ' '.join(tweets)
        words = all_text.split()
```

```
In [0]: counts = Counter(words)
        vocab = sorted(counts, key=counts.get, reverse=True)
        vocab_to_int = {word: ii for ii, word in enumerate(vocab, 1)}

        tweets_ints = []
        for each in tweets:
            tweets_ints.append([vocab_to_int[word] for word in each.split()])
```

```
In [8]: # Encoding the labels::
        list_labels = []

        for l in labels_org.split():
            if l == "depressive":
                list_labels.append(1)
            else:
                list_labels.append(0)

        labels = np.array(list_labels)
        print(len(labels))
```

```
1176
```

```
In [9]: tweets_lens = Counter([len(x) for x in tweets_ints])
        print("Zero-length tweets: {}".format(tweets_lens[0]))
        print("Maximum tweets length: {}".format(max(tweets_lens)))
```

```
Zero-length tweets: 1
Maximum tweets length: 63
```

```
In [0]: # Filter out that tweets with 0 length
        tweets_ints = [r[0:200] for r in tweets_ints if len(r) > 0]

In [11]: from collections import Counter
         tweets_lens = Counter([len(x) for x in tweets_ints])
         print("Zero-length tweets: {}".format(tweets_lens[0]))
         print("Maximum tweet length: {}".format(max(tweets_lens)))

Zero-length tweets: 0
Maximum tweet length: 63


In [0]: seq_len = 200
        features = np.zeros((len(tweets_ints), seq_len), dtype=int)
        # print(features[:10,:100])
        for i, row in enumerate(tweets_ints):
            features[i, -len(row):] = np.array(row)[:seq_len]
        #features[:10,:100]

In [13]: #split_frac = 0.8

         #split_index = int(split_frac * len(features))

         #training_validation_x, test_x = features[:split_index], features[split_index:]
         #training_validation_y, test_y = labels[:split_index], labels[split_index:]

         training_validation_x = features
         training_validation_y = labels

         split_train_val = int(len(features)/k)
         #split_index = int(split_frac * len(val_x))

         #val_x, test_x = val_x[:split_index], val_x[split_index:]
         #val_y, test_y = val_y[:split_index], val_y[split_index:]

         print("\t\t\tFeature Shapes:")
         print("Train & Validation data set: {}".format(training_validation_x.shape))
         print("Train & Validation label set: {}".format(training_validation_y.shape))

         ############
         '''
         dataset_split_index = int(len(final_dataset)*0.1)

         training_validation_dataset = final_dataset[dataset_split_index:]
         testing_dataset = final_dataset[:dataset_split_index]

         training_validation_labelset = final_labelset[dataset_split_index:]
         testing_labelset = final_labelset[:dataset_split_index]
```

```
print(dataset_split_index)

print('len(training_validation_dataset) =',len(training_validation_dataset))
print('len(training_validation_labelset) =',len(training_validation_labelset))

print('len(testing_dataset) =',len(testing_dataset))
print('len(testing_labelset)',len(testing_labelset))
'''
```

```
                    Feature Shapes:
Train & Validation data set: (1176, 200)
Train & Validation label set: (1176,)
```

Out[13]: "\ndataset_split_index = int(len(final_dataset)*0.1)\n\ntraining_validation_dataset =

In [0]:
```
n_words = len(vocab_to_int) + 1 # Add 1 for 0 added to vocab

# Create the graph object
tf.reset_default_graph()
with tf.name_scope('inputs'):
    inputs_ = tf.placeholder(tf.int32, [None, None], name="inputs")
    labels_ = tf.placeholder(tf.int32, [None, None], name="labels")
    keep_prob = tf.placeholder(tf.float32, name="keep_prob")
```

In [0]:
```
# Size of the embedding vectors (number of units in the embedding layer)
embed_size = 300

with tf.name_scope("Embeddings"):
    embedding = tf.Variable(tf.random_uniform((n_words, embed_size), -1, 1))
    embed = tf.nn.embedding_lookup(embedding, inputs_)
```

In [0]:
```
def gru_cell():
    # Basic GRU cell
    gru = tf.contrib.rnn.GRUCell(gru_size, reuse=tf.get_variable_scope().reuse)
    # Add dropout to the cell
    return tf.contrib.rnn.DropoutWrapper(gru, output_keep_prob=keep_prob)

with tf.name_scope("RNN_layers"):
    # Stack up multiple GRU layers, for deep learning
    cell = tf.contrib.rnn.MultiRNNCell([gru_cell() for _ in range(gru_layers)])

    # Getting an initial state of all zeros
    initial_state = cell.zero_state(batch_size, tf.float32)
```

In [0]:
```
with tf.name_scope("RNN_forward"):
    outputs, final_state = tf.nn.dynamic_rnn(cell, embed, initial_state=initial_state)
```

In [0]:
```
# Output::
```

```
        with tf.name_scope('predictions'):
            predictions = tf.contrib.layers.fully_connected(outputs[:, -1], 1, activation_fn=ti
            tf.summary.histogram('predictions', predictions)
        with tf.name_scope('cost'):
            cost = tf.losses.mean_squared_error(labels_, predictions)
            tf.summary.scalar('cost', cost)

        with tf.name_scope('train'):
            optimizer = tf.train.AdamOptimizer(learning_rate).minimize(cost)

        merged = tf.summary.merge_all()
```

In [0]:
```
# Validation accuracy::

        with tf.name_scope('validation'):
            correct_pred = tf.equal(tf.cast(tf.round(predictions), tf.int32), labels_)
            accuracy = tf.reduce_mean(tf.cast(correct_pred, tf.float32))
```

In [0]:
```
# Batching::

        def get_batches(x, y, batch_size=100):

            n_batches = len(x)//batch_size
            x, y = x[:n_batches*batch_size], y[:n_batches*batch_size]
            for ii in range(0, len(x), batch_size):
                yield x[ii:ii+batch_size], y[ii:ii+batch_size]
```

In [21]:
```
# Training::
        saver = tf.train.Saver()
        start = timer()
        folds_val_acc = []

        with tf.Session() as sess:
            sess.run(tf.global_variables_initializer())
            train_writer = tf.summary.FileWriter('./logs/tb/train', sess.graph)
            test_writer = tf.summary.FileWriter('./logs/tb/test', sess.graph)

            for fold in range(1,k+1):
                print('Fold -',fold,'out of',k,'::')
                print('--------------')

                training_validation_x = training_validation_x.tolist()
                train_x = training_validation_x[:fold*split_train_val-split_train_val]
                train_x += training_validation_x[fold*split_train_val:]
                val_x = training_validation_x[fold*split_train_val-split_train_val:fold*split_

                training_validation_x = np.array(training_validation_x)
                train_x = np.array(train_x)
```

```
val_x = np.array(val_x)

training_validation_y = training_validation_y.tolist()
train_y = training_validation_y[:fold*split_train_val-split_train_val]
train_y += training_validation_y[fold*split_train_val:]
val_y = training_validation_y[fold*split_train_val-split_train_val:fold*split_

training_validation_y = np.array(training_validation_y)
train_y = np.array(train_y)
val_y = np.array(val_y)

print('Training on',len(train_y),'samples & validating on',len(val_y),'samples
iteration = 1
for e in range(1, epochs+1):
    state = sess.run(initial_state)
    for ii, (x, y) in enumerate(get_batches(train_x, train_y, batch_size), 1)
        feed = {inputs_: x,
                labels_: y[:, None],
                keep_prob: 0.5,
                initial_state: state}
        summary, loss, state, _ = sess.run([merged, cost, final_state, optimiz

        train_writer.add_summary(summary, iteration)

        if iteration%5==0:
            print("Epoch: {}/{}".format(e, epochs),
                  "Iteration: {}".format(iteration),
                  "Train loss: {:.4f}".format(loss))

        if iteration%25==0:
            val_acc = []
            val_state = sess.run(cell.zero_state(batch_size, tf.float32))
            for x, y in get_batches(val_x, val_y, batch_size):
                feed = {inputs_: x,
                        labels_: y[:, None],
                        keep_prob: 1,
                        initial_state: val_state}
                summary, batch_acc, val_state = sess.run([merged, accuracy, fi
                val_acc.append(batch_acc)
            print("Val acc: {:.4f}".format(np.mean(val_acc)))
        iteration +=1
        test_writer.add_summary(summary, iteration)
        saver.save(sess, checkpointName)

    #saver.save(sess, checkpointName)
    # After an epoch is completed:
    val_acc = []
    val_state = sess.run(cell.zero_state(batch_size, tf.float32))
```

```
                    for x, y in get_batches(val_x, val_y, batch_size):
                        feed = {inputs_: x,
                                labels_: y[:, None],
                                keep_prob: 1,
                                initial_state: val_state}
                        summary, batch_acc, val_state = sess.run([merged, accuracy, final_stat
                        val_acc.append(batch_acc)
                    print("Val acc for epoch {:} = {:.4f}".format(e,np.mean(val_acc)))
                    test_writer.add_summary(summary, iteration)
                    saver.save(sess, checkpointName)

                saver.save(sess, checkpointName)
                # After a fold is completed:
                val_acc = []
                val_state = sess.run(cell.zero_state(batch_size, tf.float32))
                for x, y in get_batches(val_x, val_y, batch_size):
                    feed = {inputs_: x,
                            labels_: y[:, None],
                            keep_prob: 1,
                            initial_state: val_state}
                    summary, batch_acc, val_state = sess.run([merged, accuracy, final_state],
                    val_acc.append(batch_acc)
                    folds_val_acc.append(batch_acc)
                print("Val acc for fold = {:.4f}".format(np.mean(val_acc)))
                test_writer.add_summary(summary, iteration)
                saver.save(sess, checkpointName)

                print('--------------\n')

        duration = timer() - start
        print('Time elasped =',duration,'sec(s)')
```

```
Fold - 1 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.3133
Epoch: 1/3 Iteration: 10 Train loss: 0.2807
Epoch: 1/3 Iteration: 15 Train loss: 0.2397
Epoch: 1/3 Iteration: 20 Train loss: 0.4046
Epoch: 1/3 Iteration: 25 Train loss: 0.3181
Val acc: 0.5043
Epoch: 1/3 Iteration: 30 Train loss: 0.2262
Epoch: 1/3 Iteration: 35 Train loss: 0.2216
Epoch: 1/3 Iteration: 40 Train loss: 0.3491
Epoch: 1/3 Iteration: 45 Train loss: 0.2329
Epoch: 1/3 Iteration: 50 Train loss: 0.2886
Val acc: 0.5130
Epoch: 1/3 Iteration: 55 Train loss: 0.2989
```

```
Epoch: 1/3 Iteration: 60 Train loss: 0.2518
Epoch: 1/3 Iteration: 65 Train loss: 0.2954
Epoch: 1/3 Iteration: 70 Train loss: 0.2895
Epoch: 1/3 Iteration: 75 Train loss: 0.2724
Val acc: 0.4957
Epoch: 1/3 Iteration: 80 Train loss: 0.1511
Epoch: 1/3 Iteration: 85 Train loss: 0.3234
Epoch: 1/3 Iteration: 90 Train loss: 0.2994
Epoch: 1/3 Iteration: 95 Train loss: 0.2927
Epoch: 1/3 Iteration: 100 Train loss: 0.3407
Val acc: 0.4783
Epoch: 1/3 Iteration: 105 Train loss: 0.3864
Epoch: 1/3 Iteration: 110 Train loss: 0.1806
Epoch: 1/3 Iteration: 115 Train loss: 0.2152
Epoch: 1/3 Iteration: 120 Train loss: 0.1150
Epoch: 1/3 Iteration: 125 Train loss: 0.3298
Val acc: 0.4870
Epoch: 1/3 Iteration: 130 Train loss: 0.4186
Epoch: 1/3 Iteration: 135 Train loss: 0.2724
Epoch: 1/3 Iteration: 140 Train loss: 0.1886
Epoch: 1/3 Iteration: 145 Train loss: 0.2220
Epoch: 1/3 Iteration: 150 Train loss: 0.1688
Val acc: 0.4609
Epoch: 1/3 Iteration: 155 Train loss: 0.2301
Epoch: 1/3 Iteration: 160 Train loss: 0.4041
Epoch: 1/3 Iteration: 165 Train loss: 0.2088
Epoch: 1/3 Iteration: 170 Train loss: 0.2273
Epoch: 1/3 Iteration: 175 Train loss: 0.2546
Val acc: 0.4870
Epoch: 1/3 Iteration: 180 Train loss: 0.1756
Epoch: 1/3 Iteration: 185 Train loss: 0.2568
Epoch: 1/3 Iteration: 190 Train loss: 0.2194
Epoch: 1/3 Iteration: 195 Train loss: 0.2901
Epoch: 1/3 Iteration: 200 Train loss: 0.1521
Val acc: 0.4435
Epoch: 1/3 Iteration: 205 Train loss: 0.1428
Epoch: 1/3 Iteration: 210 Train loss: 0.1843
Val acc for epoch 1 = 0.4783
Epoch: 2/3 Iteration: 215 Train loss: 0.5548
Epoch: 2/3 Iteration: 220 Train loss: 0.3627
Epoch: 2/3 Iteration: 225 Train loss: 0.3445
Val acc: 0.5043
Epoch: 2/3 Iteration: 230 Train loss: 0.2851
Epoch: 2/3 Iteration: 235 Train loss: 0.2580
Epoch: 2/3 Iteration: 240 Train loss: 0.2922
Epoch: 2/3 Iteration: 245 Train loss: 0.3503
Epoch: 2/3 Iteration: 250 Train loss: 0.3051
Val acc: 0.5391
```

```
Epoch: 2/3 Iteration: 255 Train loss: 0.3161
Epoch: 2/3 Iteration: 260 Train loss: 0.3134
Epoch: 2/3 Iteration: 265 Train loss: 0.3584
Epoch: 2/3 Iteration: 270 Train loss: 0.2992
Epoch: 2/3 Iteration: 275 Train loss: 0.2646
Val acc: 0.5304
Epoch: 2/3 Iteration: 280 Train loss: 0.2612
Epoch: 2/3 Iteration: 285 Train loss: 0.2643
Epoch: 2/3 Iteration: 290 Train loss: 0.1796
Epoch: 2/3 Iteration: 295 Train loss: 0.3766
Epoch: 2/3 Iteration: 300 Train loss: 0.4565
Val acc: 0.5043
Epoch: 2/3 Iteration: 305 Train loss: 0.2321
Epoch: 2/3 Iteration: 310 Train loss: 0.2593
Epoch: 2/3 Iteration: 315 Train loss: 0.4842
Epoch: 2/3 Iteration: 320 Train loss: 0.1986
Epoch: 2/3 Iteration: 325 Train loss: 0.2700
Val acc: 0.5043
Epoch: 2/3 Iteration: 330 Train loss: 0.2432
Epoch: 2/3 Iteration: 335 Train loss: 0.2455
Epoch: 2/3 Iteration: 340 Train loss: 0.1881
Epoch: 2/3 Iteration: 345 Train loss: 0.3723
Epoch: 2/3 Iteration: 350 Train loss: 0.2400
Val acc: 0.5043
Epoch: 2/3 Iteration: 355 Train loss: 0.1675
Epoch: 2/3 Iteration: 360 Train loss: 0.2181
Epoch: 2/3 Iteration: 365 Train loss: 0.1385
Epoch: 2/3 Iteration: 370 Train loss: 0.1974
Epoch: 2/3 Iteration: 375 Train loss: 0.2802
Val acc: 0.4870
Epoch: 2/3 Iteration: 380 Train loss: 0.2267
Epoch: 2/3 Iteration: 385 Train loss: 0.2123
Epoch: 2/3 Iteration: 390 Train loss: 0.2492
Epoch: 2/3 Iteration: 395 Train loss: 0.1672
Epoch: 2/3 Iteration: 400 Train loss: 0.5469
Val acc: 0.4348
Epoch: 2/3 Iteration: 405 Train loss: 0.1405
Epoch: 2/3 Iteration: 410 Train loss: 0.0493
Epoch: 2/3 Iteration: 415 Train loss: 0.1244
Epoch: 2/3 Iteration: 420 Train loss: 0.1090
Val acc for epoch 2 = 0.4783
Epoch: 3/3 Iteration: 425 Train loss: 0.2935
Val acc: 0.4870
Epoch: 3/3 Iteration: 430 Train loss: 0.3906
Epoch: 3/3 Iteration: 435 Train loss: 0.3410
Epoch: 3/3 Iteration: 440 Train loss: 0.3271
Epoch: 3/3 Iteration: 445 Train loss: 0.2434
Epoch: 3/3 Iteration: 450 Train loss: 0.2868
```

```
Val acc: 0.5565
Epoch: 3/3 Iteration: 455 Train loss: 0.1884
Epoch: 3/3 Iteration: 460 Train loss: 0.2428
Epoch: 3/3 Iteration: 465 Train loss: 0.4387
Epoch: 3/3 Iteration: 470 Train loss: 0.2038
Epoch: 3/3 Iteration: 475 Train loss: 0.2742
Val acc: 0.5565
Epoch: 3/3 Iteration: 480 Train loss: 0.1603
Epoch: 3/3 Iteration: 485 Train loss: 0.2044
Epoch: 3/3 Iteration: 490 Train loss: 0.3720
Epoch: 3/3 Iteration: 495 Train loss: 0.2487
Epoch: 3/3 Iteration: 500 Train loss: 0.2107
Val acc: 0.5217
Epoch: 3/3 Iteration: 505 Train loss: 0.1785
Epoch: 3/3 Iteration: 510 Train loss: 0.1071
Epoch: 3/3 Iteration: 515 Train loss: 0.2357
Epoch: 3/3 Iteration: 520 Train loss: 0.2788
Epoch: 3/3 Iteration: 525 Train loss: 0.2070
Val acc: 0.5217
Epoch: 3/3 Iteration: 530 Train loss: 0.3076
Epoch: 3/3 Iteration: 535 Train loss: 0.2214
Epoch: 3/3 Iteration: 540 Train loss: 0.3510
Epoch: 3/3 Iteration: 545 Train loss: 0.1856
Epoch: 3/3 Iteration: 550 Train loss: 0.2531
Val acc: 0.4957
Epoch: 3/3 Iteration: 555 Train loss: 0.2227
Epoch: 3/3 Iteration: 560 Train loss: 0.1573
Epoch: 3/3 Iteration: 565 Train loss: 0.3409
Epoch: 3/3 Iteration: 570 Train loss: 0.1084
Epoch: 3/3 Iteration: 575 Train loss: 0.1287
Val acc: 0.4870
Epoch: 3/3 Iteration: 580 Train loss: 0.2279
Epoch: 3/3 Iteration: 585 Train loss: 0.1567
Epoch: 3/3 Iteration: 590 Train loss: 0.1102
Epoch: 3/3 Iteration: 595 Train loss: 0.1324
Epoch: 3/3 Iteration: 600 Train loss: 0.1485
Val acc: 0.4435
Epoch: 3/3 Iteration: 605 Train loss: 0.1937
Epoch: 3/3 Iteration: 610 Train loss: 0.1496
Epoch: 3/3 Iteration: 615 Train loss: 0.1942
Epoch: 3/3 Iteration: 620 Train loss: 0.0863
Epoch: 3/3 Iteration: 625 Train loss: 0.2437
Val acc: 0.4696
Epoch: 3/3 Iteration: 630 Train loss: 0.0634
Val acc for epoch 3 = 0.4435
Val acc for fold = 0.4435
--------------
```

```
Fold - 2 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.3256
Epoch: 1/3 Iteration: 10 Train loss: 0.2674
Epoch: 1/3 Iteration: 15 Train loss: 0.1944
Epoch: 1/3 Iteration: 20 Train loss: 0.2116
Epoch: 1/3 Iteration: 25 Train loss: 0.2942
Val acc: 0.5913
Epoch: 1/3 Iteration: 30 Train loss: 0.2507
Epoch: 1/3 Iteration: 35 Train loss: 0.3638
Epoch: 1/3 Iteration: 40 Train loss: 0.1705
Epoch: 1/3 Iteration: 45 Train loss: 0.2240
Epoch: 1/3 Iteration: 50 Train loss: 0.2559
Val acc: 0.6435
Epoch: 1/3 Iteration: 55 Train loss: 0.2733
Epoch: 1/3 Iteration: 60 Train loss: 0.2335
Epoch: 1/3 Iteration: 65 Train loss: 0.2473
Epoch: 1/3 Iteration: 70 Train loss: 0.2722
Epoch: 1/3 Iteration: 75 Train loss: 0.2752
Val acc: 0.7130
Epoch: 1/3 Iteration: 80 Train loss: 0.2461
Epoch: 1/3 Iteration: 85 Train loss: 0.2697
Epoch: 1/3 Iteration: 90 Train loss: 0.2305
Epoch: 1/3 Iteration: 95 Train loss: 0.1000
Epoch: 1/3 Iteration: 100 Train loss: 0.2839
Val acc: 0.5913
Epoch: 1/3 Iteration: 105 Train loss: 0.5329
Epoch: 1/3 Iteration: 110 Train loss: 0.1977
Epoch: 1/3 Iteration: 115 Train loss: 0.1935
Epoch: 1/3 Iteration: 120 Train loss: 0.1721
Epoch: 1/3 Iteration: 125 Train loss: 0.2402
Val acc: 0.5478
Epoch: 1/3 Iteration: 130 Train loss: 0.3937
Epoch: 1/3 Iteration: 135 Train loss: 0.2172
Epoch: 1/3 Iteration: 140 Train loss: 0.1423
Epoch: 1/3 Iteration: 145 Train loss: 0.2085
Epoch: 1/3 Iteration: 150 Train loss: 0.1134
Val acc: 0.4783
Epoch: 1/3 Iteration: 155 Train loss: 0.2918
Epoch: 1/3 Iteration: 160 Train loss: 0.2904
Epoch: 1/3 Iteration: 165 Train loss: 0.1549
Epoch: 1/3 Iteration: 170 Train loss: 0.0333
Epoch: 1/3 Iteration: 175 Train loss: 0.1671
Val acc: 0.4783
Epoch: 1/3 Iteration: 180 Train loss: 0.0318
Epoch: 1/3 Iteration: 185 Train loss: 0.0896
Epoch: 1/3 Iteration: 190 Train loss: 0.0272
```

```
Epoch: 1/3 Iteration: 195 Train loss: 0.2298
Epoch: 1/3 Iteration: 200 Train loss: 0.1085
Val acc: 0.5130
Epoch: 1/3 Iteration: 205 Train loss: 0.2233
Epoch: 1/3 Iteration: 210 Train loss: 0.1604
Val acc for epoch 1 = 0.4696
Epoch: 2/3 Iteration: 215 Train loss: 0.3926
Epoch: 2/3 Iteration: 220 Train loss: 0.3857
Epoch: 2/3 Iteration: 225 Train loss: 0.0459
Val acc: 0.4870
Epoch: 2/3 Iteration: 230 Train loss: 0.1898
Epoch: 2/3 Iteration: 235 Train loss: 0.2820
Epoch: 2/3 Iteration: 240 Train loss: 0.0808
Epoch: 2/3 Iteration: 245 Train loss: 0.2679
Epoch: 2/3 Iteration: 250 Train loss: 0.2092
Val acc: 0.6783
Epoch: 2/3 Iteration: 255 Train loss: 0.2670
Epoch: 2/3 Iteration: 260 Train loss: 0.1205
Epoch: 2/3 Iteration: 265 Train loss: 0.2537
Epoch: 2/3 Iteration: 270 Train loss: 0.1152
Epoch: 2/3 Iteration: 275 Train loss: 0.0992
Val acc: 0.6435
Epoch: 2/3 Iteration: 280 Train loss: 0.0417
Epoch: 2/3 Iteration: 285 Train loss: 0.1540
Epoch: 2/3 Iteration: 290 Train loss: 0.1074
Epoch: 2/3 Iteration: 295 Train loss: 0.3591
Epoch: 2/3 Iteration: 300 Train loss: 0.2128
Val acc: 0.5913
Epoch: 2/3 Iteration: 305 Train loss: 0.1408
Epoch: 2/3 Iteration: 310 Train loss: 0.1041
Epoch: 2/3 Iteration: 315 Train loss: 0.4645
Epoch: 2/3 Iteration: 320 Train loss: 0.1409
Epoch: 2/3 Iteration: 325 Train loss: 0.1999
Val acc: 0.4609
Epoch: 2/3 Iteration: 330 Train loss: 0.1687
Epoch: 2/3 Iteration: 335 Train loss: 0.1667
Epoch: 2/3 Iteration: 340 Train loss: 0.0095
Epoch: 2/3 Iteration: 345 Train loss: 0.3052
Epoch: 2/3 Iteration: 350 Train loss: 0.3610
Val acc: 0.5565
Epoch: 2/3 Iteration: 355 Train loss: 0.2247
Epoch: 2/3 Iteration: 360 Train loss: 0.1267
Epoch: 2/3 Iteration: 365 Train loss: 0.1877
Epoch: 2/3 Iteration: 370 Train loss: 0.1909
Epoch: 2/3 Iteration: 375 Train loss: 0.2008
Val acc: 0.4783
Epoch: 2/3 Iteration: 380 Train loss: 0.2767
Epoch: 2/3 Iteration: 385 Train loss: 0.1897
```

```
Epoch: 2/3 Iteration: 390 Train loss: 0.1439
Epoch: 2/3 Iteration: 395 Train loss: 0.0144
Epoch: 2/3 Iteration: 400 Train loss: 0.5520
Val acc: 0.4783
Epoch: 2/3 Iteration: 405 Train loss: 0.0065
Epoch: 2/3 Iteration: 410 Train loss: 0.1326
Epoch: 2/3 Iteration: 415 Train loss: 0.0109
Epoch: 2/3 Iteration: 420 Train loss: 0.0079
Val acc for epoch 2 = 0.5043
Epoch: 3/3 Iteration: 425 Train loss: 0.4121
Val acc: 0.4696
Epoch: 3/3 Iteration: 430 Train loss: 0.3438
Epoch: 3/3 Iteration: 435 Train loss: 0.4150
Epoch: 3/3 Iteration: 440 Train loss: 0.5644
Epoch: 3/3 Iteration: 445 Train loss: 0.2771
Epoch: 3/3 Iteration: 450 Train loss: 0.2466
Val acc: 0.5391
Epoch: 3/3 Iteration: 455 Train loss: 0.3091
Epoch: 3/3 Iteration: 460 Train loss: 0.2665
Epoch: 3/3 Iteration: 465 Train loss: 0.1841
Epoch: 3/3 Iteration: 470 Train loss: 0.2834
Epoch: 3/3 Iteration: 475 Train loss: 0.2328
Val acc: 0.5913
Epoch: 3/3 Iteration: 480 Train loss: 0.0361
Epoch: 3/3 Iteration: 485 Train loss: 0.2525
Epoch: 3/3 Iteration: 490 Train loss: 0.2969
Epoch: 3/3 Iteration: 495 Train loss: 0.0589
Epoch: 3/3 Iteration: 500 Train loss: 0.2585
Val acc: 0.6087
Epoch: 3/3 Iteration: 505 Train loss: 0.2006
Epoch: 3/3 Iteration: 510 Train loss: 0.2110
Epoch: 3/3 Iteration: 515 Train loss: 0.0246
Epoch: 3/3 Iteration: 520 Train loss: 0.3057
Epoch: 3/3 Iteration: 525 Train loss: 0.1301
Val acc: 0.6261
Epoch: 3/3 Iteration: 530 Train loss: 0.0635
Epoch: 3/3 Iteration: 535 Train loss: 0.1513
Epoch: 3/3 Iteration: 540 Train loss: 0.1145
Epoch: 3/3 Iteration: 545 Train loss: 0.2978
Epoch: 3/3 Iteration: 550 Train loss: 0.1473
Val acc: 0.5913
Epoch: 3/3 Iteration: 555 Train loss: 0.2652
Epoch: 3/3 Iteration: 560 Train loss: 0.2003
Epoch: 3/3 Iteration: 565 Train loss: 0.2330
Epoch: 3/3 Iteration: 570 Train loss: 0.0061
Epoch: 3/3 Iteration: 575 Train loss: 0.2582
Val acc: 0.4870
Epoch: 3/3 Iteration: 580 Train loss: 0.1455
```

```
Epoch: 3/3 Iteration: 585 Train loss: 0.0582
Epoch: 3/3 Iteration: 590 Train loss: 0.1996
Epoch: 3/3 Iteration: 595 Train loss: 0.0050
Epoch: 3/3 Iteration: 600 Train loss: 0.1227
Val acc: 0.4783
Epoch: 3/3 Iteration: 605 Train loss: 0.2089
Epoch: 3/3 Iteration: 610 Train loss: 0.1783
Epoch: 3/3 Iteration: 615 Train loss: 0.1174
Epoch: 3/3 Iteration: 620 Train loss: 0.0004
Epoch: 3/3 Iteration: 625 Train loss: 0.4334
Val acc: 0.5304
Epoch: 3/3 Iteration: 630 Train loss: 0.0009
Val acc for epoch 3 = 0.4957
Val acc for fold = 0.4957
--------------

Fold - 3 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.4725
Epoch: 1/3 Iteration: 10 Train loss: 0.3966
Epoch: 1/3 Iteration: 15 Train loss: 0.1680
Epoch: 1/3 Iteration: 20 Train loss: 0.2298
Epoch: 1/3 Iteration: 25 Train loss: 0.5599
Val acc: 0.7043
Epoch: 1/3 Iteration: 30 Train loss: 0.1908
Epoch: 1/3 Iteration: 35 Train loss: 0.2680
Epoch: 1/3 Iteration: 40 Train loss: 0.2186
Epoch: 1/3 Iteration: 45 Train loss: 0.2755
Epoch: 1/3 Iteration: 50 Train loss: 0.1529
Val acc: 0.8000
Epoch: 1/3 Iteration: 55 Train loss: 0.1425
Epoch: 1/3 Iteration: 60 Train loss: 0.1237
Epoch: 1/3 Iteration: 65 Train loss: 0.3038
Epoch: 1/3 Iteration: 70 Train loss: 0.0607
Epoch: 1/3 Iteration: 75 Train loss: 0.2608
Val acc: 0.8261
Epoch: 1/3 Iteration: 80 Train loss: 0.0530
Epoch: 1/3 Iteration: 85 Train loss: 0.3409
Epoch: 1/3 Iteration: 90 Train loss: 0.1851
Epoch: 1/3 Iteration: 95 Train loss: 0.0770
Epoch: 1/3 Iteration: 100 Train loss: 0.0969
Val acc: 0.8261
Epoch: 1/3 Iteration: 105 Train loss: 0.3492
Epoch: 1/3 Iteration: 110 Train loss: 0.0292
Epoch: 1/3 Iteration: 115 Train loss: 0.3462
Epoch: 1/3 Iteration: 120 Train loss: 0.1201
Epoch: 1/3 Iteration: 125 Train loss: 0.0731
```

```
Val acc: 0.7913
Epoch: 1/3 Iteration: 130 Train loss: 0.3392
Epoch: 1/3 Iteration: 135 Train loss: 0.1175
Epoch: 1/3 Iteration: 140 Train loss: 0.0123
Epoch: 1/3 Iteration: 145 Train loss: 0.0071
Epoch: 1/3 Iteration: 150 Train loss: 0.0382
Val acc: 0.6261
Epoch: 1/3 Iteration: 155 Train loss: 0.0360
Epoch: 1/3 Iteration: 160 Train loss: 0.0614
Epoch: 1/3 Iteration: 165 Train loss: 0.0215
Epoch: 1/3 Iteration: 170 Train loss: 0.0030
Epoch: 1/3 Iteration: 175 Train loss: 0.1040
Val acc: 0.6783
Epoch: 1/3 Iteration: 180 Train loss: 0.0179
Epoch: 1/3 Iteration: 185 Train loss: 0.0048
Epoch: 1/3 Iteration: 190 Train loss: 0.0178
Epoch: 1/3 Iteration: 195 Train loss: 0.4607
Epoch: 1/3 Iteration: 200 Train loss: 0.1747
Val acc: 0.7130
Epoch: 1/3 Iteration: 205 Train loss: 0.1941
Epoch: 1/3 Iteration: 210 Train loss: 0.0202
Val acc for epoch 1 = 0.7739
Epoch: 2/3 Iteration: 215 Train loss: 0.2567
Epoch: 2/3 Iteration: 220 Train loss: 0.1917
Epoch: 2/3 Iteration: 225 Train loss: 0.0311
Val acc: 0.7739
Epoch: 2/3 Iteration: 230 Train loss: 0.1811
Epoch: 2/3 Iteration: 235 Train loss: 0.1057
Epoch: 2/3 Iteration: 240 Train loss: 0.2208
Epoch: 2/3 Iteration: 245 Train loss: 0.4324
Epoch: 2/3 Iteration: 250 Train loss: 0.2365
Val acc: 0.7565
Epoch: 2/3 Iteration: 255 Train loss: 0.1098
Epoch: 2/3 Iteration: 260 Train loss: 0.0233
Epoch: 2/3 Iteration: 265 Train loss: 0.1743
Epoch: 2/3 Iteration: 270 Train loss: 0.0268
Epoch: 2/3 Iteration: 275 Train loss: 0.0379
Val acc: 0.8174
Epoch: 2/3 Iteration: 280 Train loss: 0.0005
Epoch: 2/3 Iteration: 285 Train loss: 0.2015
Epoch: 2/3 Iteration: 290 Train loss: 0.0233
Epoch: 2/3 Iteration: 295 Train loss: 0.1592
Epoch: 2/3 Iteration: 300 Train loss: 0.0043
Val acc: 0.8261
Epoch: 2/3 Iteration: 305 Train loss: 0.0041
Epoch: 2/3 Iteration: 310 Train loss: 0.0097
Epoch: 2/3 Iteration: 315 Train loss: 0.1911
Epoch: 2/3 Iteration: 320 Train loss: 0.0009
```

```
Epoch: 2/3 Iteration: 325 Train loss: 0.0218
Val acc: 0.7826
Epoch: 2/3 Iteration: 330 Train loss: 0.0593
Epoch: 2/3 Iteration: 335 Train loss: 0.0019
Epoch: 2/3 Iteration: 340 Train loss: 0.0013
Epoch: 2/3 Iteration: 345 Train loss: 0.0679
Epoch: 2/3 Iteration: 350 Train loss: 0.1426
Val acc: 0.7652
Epoch: 2/3 Iteration: 355 Train loss: 0.1496
Epoch: 2/3 Iteration: 360 Train loss: 0.1888
Epoch: 2/3 Iteration: 365 Train loss: 0.0003
Epoch: 2/3 Iteration: 370 Train loss: 0.1321
Epoch: 2/3 Iteration: 375 Train loss: 0.0140
Val acc: 0.6783
Epoch: 2/3 Iteration: 380 Train loss: 0.2054
Epoch: 2/3 Iteration: 385 Train loss: 0.1588
Epoch: 2/3 Iteration: 390 Train loss: 0.3003
Epoch: 2/3 Iteration: 395 Train loss: 0.0160
Epoch: 2/3 Iteration: 400 Train loss: 0.4182
Val acc: 0.6957
Epoch: 2/3 Iteration: 405 Train loss: 0.0333
Epoch: 2/3 Iteration: 410 Train loss: 0.1039
Epoch: 2/3 Iteration: 415 Train loss: 0.0002
Epoch: 2/3 Iteration: 420 Train loss: 0.1773
Val acc for epoch 2 = 0.6870
Epoch: 3/3 Iteration: 425 Train loss: 0.4169
Val acc: 0.7130
Epoch: 3/3 Iteration: 430 Train loss: 0.2005
Epoch: 3/3 Iteration: 435 Train loss: 0.0284
Epoch: 3/3 Iteration: 440 Train loss: 0.2679
Epoch: 3/3 Iteration: 445 Train loss: 0.4691
Epoch: 3/3 Iteration: 450 Train loss: 0.4025
Val acc: 0.7826
Epoch: 3/3 Iteration: 455 Train loss: 0.1050
Epoch: 3/3 Iteration: 460 Train loss: 0.1520
Epoch: 3/3 Iteration: 465 Train loss: 0.2826
Epoch: 3/3 Iteration: 470 Train loss: 0.1340
Epoch: 3/3 Iteration: 475 Train loss: 0.0638
Val acc: 0.8000
Epoch: 3/3 Iteration: 480 Train loss: 0.0814
Epoch: 3/3 Iteration: 485 Train loss: 0.0187
Epoch: 3/3 Iteration: 490 Train loss: 0.1544
Epoch: 3/3 Iteration: 495 Train loss: 0.0043
Epoch: 3/3 Iteration: 500 Train loss: 0.0729
Val acc: 0.8435
Epoch: 3/3 Iteration: 505 Train loss: 0.0002
Epoch: 3/3 Iteration: 510 Train loss: 0.1531
Epoch: 3/3 Iteration: 515 Train loss: 0.0005
```

```
Epoch: 3/3 Iteration: 520 Train loss: 0.3792
Epoch: 3/3 Iteration: 525 Train loss: 0.0489
Val acc: 0.8174
Epoch: 3/3 Iteration: 530 Train loss: 0.0012
Epoch: 3/3 Iteration: 535 Train loss: 0.1077
Epoch: 3/3 Iteration: 540 Train loss: 0.0002
Epoch: 3/3 Iteration: 545 Train loss: 0.0019
Epoch: 3/3 Iteration: 550 Train loss: 0.0034
Val acc: 0.7826
Epoch: 3/3 Iteration: 555 Train loss: 0.1064
Epoch: 3/3 Iteration: 560 Train loss: 0.0197
Epoch: 3/3 Iteration: 565 Train loss: 0.1267
Epoch: 3/3 Iteration: 570 Train loss: 0.0066
Epoch: 3/3 Iteration: 575 Train loss: 0.1984
Val acc: 0.6696
Epoch: 3/3 Iteration: 580 Train loss: 0.1934
Epoch: 3/3 Iteration: 585 Train loss: 0.0230
Epoch: 3/3 Iteration: 590 Train loss: 0.1921
Epoch: 3/3 Iteration: 595 Train loss: 0.0278
Epoch: 3/3 Iteration: 600 Train loss: 0.1994
Val acc: 0.6957
Epoch: 3/3 Iteration: 605 Train loss: 0.1953
Epoch: 3/3 Iteration: 610 Train loss: 0.0005
Epoch: 3/3 Iteration: 615 Train loss: 0.0007
Epoch: 3/3 Iteration: 620 Train loss: 0.1768
Epoch: 3/3 Iteration: 625 Train loss: 0.2098
Val acc: 0.7217
Epoch: 3/3 Iteration: 630 Train loss: 0.0004
Val acc for epoch 3 = 0.7130
Val acc for fold = 0.7130
--------------

Fold - 4 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.2010
Epoch: 1/3 Iteration: 10 Train loss: 0.1960
Epoch: 1/3 Iteration: 15 Train loss: 0.0009
Epoch: 1/3 Iteration: 20 Train loss: 0.0289
Epoch: 1/3 Iteration: 25 Train loss: 0.3742
Val acc: 0.8348
Epoch: 1/3 Iteration: 30 Train loss: 0.1138
Epoch: 1/3 Iteration: 35 Train loss: 0.4363
Epoch: 1/3 Iteration: 40 Train loss: 0.3792
Epoch: 1/3 Iteration: 45 Train loss: 0.0515
Epoch: 1/3 Iteration: 50 Train loss: 0.0037
Val acc: 0.9565
Epoch: 1/3 Iteration: 55 Train loss: 0.1569
```

```
Epoch: 1/3 Iteration: 60 Train loss: 0.0673
Epoch: 1/3 Iteration: 65 Train loss: 0.0808
Epoch: 1/3 Iteration: 70 Train loss: 0.2009
Epoch: 1/3 Iteration: 75 Train loss: 0.0006
Val acc: 0.9565
Epoch: 1/3 Iteration: 80 Train loss: 0.0732
Epoch: 1/3 Iteration: 85 Train loss: 0.2928
Epoch: 1/3 Iteration: 90 Train loss: 0.0608
Epoch: 1/3 Iteration: 95 Train loss: 0.0422
Epoch: 1/3 Iteration: 100 Train loss: 0.0225
Val acc: 0.9217
Epoch: 1/3 Iteration: 105 Train loss: 0.0217
Epoch: 1/3 Iteration: 110 Train loss: 0.0148
Epoch: 1/3 Iteration: 115 Train loss: 0.1814
Epoch: 1/3 Iteration: 120 Train loss: 0.0260
Epoch: 1/3 Iteration: 125 Train loss: 0.0244
Val acc: 0.9043
Epoch: 1/3 Iteration: 130 Train loss: 0.0273
Epoch: 1/3 Iteration: 135 Train loss: 0.0466
Epoch: 1/3 Iteration: 140 Train loss: 0.0575
Epoch: 1/3 Iteration: 145 Train loss: 0.0007
Epoch: 1/3 Iteration: 150 Train loss: 0.0071
Val acc: 0.8870
Epoch: 1/3 Iteration: 155 Train loss: 0.0001
Epoch: 1/3 Iteration: 160 Train loss: 0.0355
Epoch: 1/3 Iteration: 165 Train loss: 0.0214
Epoch: 1/3 Iteration: 170 Train loss: 0.0100
Epoch: 1/3 Iteration: 175 Train loss: 0.0282
Val acc: 0.8435
Epoch: 1/3 Iteration: 180 Train loss: 0.1455
Epoch: 1/3 Iteration: 185 Train loss: 0.0058
Epoch: 1/3 Iteration: 190 Train loss: 0.0016
Epoch: 1/3 Iteration: 195 Train loss: 0.2602
Epoch: 1/3 Iteration: 200 Train loss: 0.0013
Val acc: 0.8783
Epoch: 1/3 Iteration: 205 Train loss: 0.0253
Epoch: 1/3 Iteration: 210 Train loss: 0.0056
Val acc for epoch 1 = 0.7391
Epoch: 2/3 Iteration: 215 Train loss: 0.1567
Epoch: 2/3 Iteration: 220 Train loss: 0.0026
Epoch: 2/3 Iteration: 225 Train loss: 0.0003
Val acc: 0.7565
Epoch: 2/3 Iteration: 230 Train loss: 0.1970
Epoch: 2/3 Iteration: 235 Train loss: 0.0206
Epoch: 2/3 Iteration: 240 Train loss: 0.2558
Epoch: 2/3 Iteration: 245 Train loss: 0.3161
Epoch: 2/3 Iteration: 250 Train loss: 0.2290
Val acc: 0.9391
```

```
Epoch: 2/3 Iteration: 255 Train loss: 0.0017
Epoch: 2/3 Iteration: 260 Train loss: 0.3292
Epoch: 2/3 Iteration: 265 Train loss: 0.1863
Epoch: 2/3 Iteration: 270 Train loss: 0.0002
Epoch: 2/3 Iteration: 275 Train loss: 0.0002
Val acc: 0.9478
Epoch: 2/3 Iteration: 280 Train loss: 0.3323
Epoch: 2/3 Iteration: 285 Train loss: 0.1966
Epoch: 2/3 Iteration: 290 Train loss: 0.0002
Epoch: 2/3 Iteration: 295 Train loss: 0.0015
Epoch: 2/3 Iteration: 300 Train loss: 0.0000
Val acc: 0.9304
Epoch: 2/3 Iteration: 305 Train loss: 0.0039
Epoch: 2/3 Iteration: 310 Train loss: 0.0002
Epoch: 2/3 Iteration: 315 Train loss: 0.1662
Epoch: 2/3 Iteration: 320 Train loss: 0.0012
Epoch: 2/3 Iteration: 325 Train loss: 0.0266
Val acc: 0.9043
Epoch: 2/3 Iteration: 330 Train loss: 0.0472
Epoch: 2/3 Iteration: 335 Train loss: 0.0001
Epoch: 2/3 Iteration: 340 Train loss: 0.0019
Epoch: 2/3 Iteration: 345 Train loss: 0.0004
Epoch: 2/3 Iteration: 350 Train loss: 0.0004
Val acc: 0.9478
Epoch: 2/3 Iteration: 355 Train loss: 0.0519
Epoch: 2/3 Iteration: 360 Train loss: 0.1878
Epoch: 2/3 Iteration: 365 Train loss: 0.0231
Epoch: 2/3 Iteration: 370 Train loss: 0.1822
Epoch: 2/3 Iteration: 375 Train loss: 0.0010
Val acc: 0.9130
Epoch: 2/3 Iteration: 380 Train loss: 0.2049
Epoch: 2/3 Iteration: 385 Train loss: 0.0842
Epoch: 2/3 Iteration: 390 Train loss: 0.0059
Epoch: 2/3 Iteration: 395 Train loss: 0.0409
Epoch: 2/3 Iteration: 400 Train loss: 0.5349
Val acc: 0.8870
Epoch: 2/3 Iteration: 405 Train loss: 0.0029
Epoch: 2/3 Iteration: 410 Train loss: 0.0389
Epoch: 2/3 Iteration: 415 Train loss: 0.0013
Epoch: 2/3 Iteration: 420 Train loss: 0.0000
Val acc for epoch 2 = 0.8609
Epoch: 3/3 Iteration: 425 Train loss: 0.3823
Val acc: 0.8609
Epoch: 3/3 Iteration: 430 Train loss: 0.1914
Epoch: 3/3 Iteration: 435 Train loss: 0.0001
Epoch: 3/3 Iteration: 440 Train loss: 0.1679
Epoch: 3/3 Iteration: 445 Train loss: 0.0013
Epoch: 3/3 Iteration: 450 Train loss: 0.3528
```

```
Val acc: 0.9130
Epoch: 3/3 Iteration: 455 Train loss: 0.0613
Epoch: 3/3 Iteration: 460 Train loss: 0.0308
Epoch: 3/3 Iteration: 465 Train loss: 0.0030
Epoch: 3/3 Iteration: 470 Train loss: 0.1998
Epoch: 3/3 Iteration: 475 Train loss: 0.2002
Val acc: 0.8435
Epoch: 3/3 Iteration: 480 Train loss: 0.0001
Epoch: 3/3 Iteration: 485 Train loss: 0.1503
Epoch: 3/3 Iteration: 490 Train loss: 0.0047
Epoch: 3/3 Iteration: 495 Train loss: 0.0001
Epoch: 3/3 Iteration: 500 Train loss: 0.0041
Val acc: 0.9652
Epoch: 3/3 Iteration: 505 Train loss: 0.0004
Epoch: 3/3 Iteration: 510 Train loss: 0.0028
Epoch: 3/3 Iteration: 515 Train loss: 0.0001
Epoch: 3/3 Iteration: 520 Train loss: 0.0208
Epoch: 3/3 Iteration: 525 Train loss: 0.0086
Val acc: 0.9826
Epoch: 3/3 Iteration: 530 Train loss: 0.1783
Epoch: 3/3 Iteration: 535 Train loss: 0.0002
Epoch: 3/3 Iteration: 540 Train loss: 0.0009
Epoch: 3/3 Iteration: 545 Train loss: 0.0000
Epoch: 3/3 Iteration: 550 Train loss: 0.0001
Val acc: 0.9478
Epoch: 3/3 Iteration: 555 Train loss: 0.0010
Epoch: 3/3 Iteration: 560 Train loss: 0.0830
Epoch: 3/3 Iteration: 565 Train loss: 0.0546
Epoch: 3/3 Iteration: 570 Train loss: 0.0027
Epoch: 3/3 Iteration: 575 Train loss: 0.2010
Val acc: 0.8174
Epoch: 3/3 Iteration: 580 Train loss: 0.1608
Epoch: 3/3 Iteration: 585 Train loss: 0.0039
Epoch: 3/3 Iteration: 590 Train loss: 0.0084
Epoch: 3/3 Iteration: 595 Train loss: 0.0144
Epoch: 3/3 Iteration: 600 Train loss: 0.1385
Val acc: 0.8783
Epoch: 3/3 Iteration: 605 Train loss: 0.0051
Epoch: 3/3 Iteration: 610 Train loss: 0.0011
Epoch: 3/3 Iteration: 615 Train loss: 0.0002
Epoch: 3/3 Iteration: 620 Train loss: 0.0002
Epoch: 3/3 Iteration: 625 Train loss: 0.1951
Val acc: 0.8696
Epoch: 3/3 Iteration: 630 Train loss: 0.0006
Val acc for epoch 3 = 0.8609
Val acc for fold = 0.8609
--------------
```

```
Fold - 5 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.1998
Epoch: 1/3 Iteration: 10 Train loss: 0.2250
Epoch: 1/3 Iteration: 15 Train loss: 0.1778
Epoch: 1/3 Iteration: 20 Train loss: 0.0076
Epoch: 1/3 Iteration: 25 Train loss: 0.4016
Val acc: 0.9130
Epoch: 1/3 Iteration: 30 Train loss: 0.0002
Epoch: 1/3 Iteration: 35 Train loss: 0.1990
Epoch: 1/3 Iteration: 40 Train loss: 0.3156
Epoch: 1/3 Iteration: 45 Train loss: 0.0008
Epoch: 1/3 Iteration: 50 Train loss: 0.0002
Val acc: 0.9913
Epoch: 1/3 Iteration: 55 Train loss: 0.0047
Epoch: 1/3 Iteration: 60 Train loss: 0.0032
Epoch: 1/3 Iteration: 65 Train loss: 0.1149
Epoch: 1/3 Iteration: 70 Train loss: 0.0023
Epoch: 1/3 Iteration: 75 Train loss: 0.0816
Val acc: 0.9913
Epoch: 1/3 Iteration: 80 Train loss: 0.0026
Epoch: 1/3 Iteration: 85 Train loss: 0.0023
Epoch: 1/3 Iteration: 90 Train loss: 0.0012
Epoch: 1/3 Iteration: 95 Train loss: 0.0001
Epoch: 1/3 Iteration: 100 Train loss: 0.0001
Val acc: 0.9826
Epoch: 1/3 Iteration: 105 Train loss: 0.0114
Epoch: 1/3 Iteration: 110 Train loss: 0.0004
Epoch: 1/3 Iteration: 115 Train loss: 0.0025
Epoch: 1/3 Iteration: 120 Train loss: 0.0000
Epoch: 1/3 Iteration: 125 Train loss: 0.0001
Val acc: 0.9826
Epoch: 1/3 Iteration: 130 Train loss: 0.0675
Epoch: 1/3 Iteration: 135 Train loss: 0.0001
Epoch: 1/3 Iteration: 140 Train loss: 0.0000
Epoch: 1/3 Iteration: 145 Train loss: 0.0005
Epoch: 1/3 Iteration: 150 Train loss: 0.1570
Val acc: 0.9739
Epoch: 1/3 Iteration: 155 Train loss: 0.0000
Epoch: 1/3 Iteration: 160 Train loss: 0.0004
Epoch: 1/3 Iteration: 165 Train loss: 0.0289
Epoch: 1/3 Iteration: 170 Train loss: 0.0000
Epoch: 1/3 Iteration: 175 Train loss: 0.0001
Val acc: 0.9304
Epoch: 1/3 Iteration: 180 Train loss: 0.0162
Epoch: 1/3 Iteration: 185 Train loss: 0.0008
Epoch: 1/3 Iteration: 190 Train loss: 0.0070
```

```
Epoch: 1/3 Iteration: 195 Train loss: 0.1242
Epoch: 1/3 Iteration: 200 Train loss: 0.0007
Val acc: 0.9304
Epoch: 1/3 Iteration: 205 Train loss: 0.0014
Epoch: 1/3 Iteration: 210 Train loss: 0.1005
Val acc for epoch 1 = 0.9304
Epoch: 2/3 Iteration: 215 Train loss: 0.0068
Epoch: 2/3 Iteration: 220 Train loss: 0.0000
Epoch: 2/3 Iteration: 225 Train loss: 0.0035
Val acc: 0.9478
Epoch: 2/3 Iteration: 230 Train loss: 0.1451
Epoch: 2/3 Iteration: 235 Train loss: 0.0745
Epoch: 2/3 Iteration: 240 Train loss: 0.0012
Epoch: 2/3 Iteration: 245 Train loss: 0.2094
Epoch: 2/3 Iteration: 250 Train loss: 0.0684
Val acc: 0.9217
Epoch: 2/3 Iteration: 255 Train loss: 0.0001
Epoch: 2/3 Iteration: 260 Train loss: 0.0417
Epoch: 2/3 Iteration: 265 Train loss: 0.0001
Epoch: 2/3 Iteration: 270 Train loss: 0.0003
Epoch: 2/3 Iteration: 275 Train loss: 0.0000
Val acc: 0.9391
Epoch: 2/3 Iteration: 280 Train loss: 0.1937
Epoch: 2/3 Iteration: 285 Train loss: 0.0002
Epoch: 2/3 Iteration: 290 Train loss: 0.0012
Epoch: 2/3 Iteration: 295 Train loss: 0.0007
Epoch: 2/3 Iteration: 300 Train loss: 0.0000
Val acc: 0.9739
Epoch: 2/3 Iteration: 305 Train loss: 0.0000
Epoch: 2/3 Iteration: 310 Train loss: 0.0001
Epoch: 2/3 Iteration: 315 Train loss: 0.0340
Epoch: 2/3 Iteration: 320 Train loss: 0.0001
Epoch: 2/3 Iteration: 325 Train loss: 0.0002
Val acc: 0.9826
Epoch: 2/3 Iteration: 330 Train loss: 0.0000
Epoch: 2/3 Iteration: 335 Train loss: 0.0000
Epoch: 2/3 Iteration: 340 Train loss: 0.0000
Epoch: 2/3 Iteration: 345 Train loss: 0.0001
Epoch: 2/3 Iteration: 350 Train loss: 0.0001
Val acc: 0.9652
Epoch: 2/3 Iteration: 355 Train loss: 0.0020
Epoch: 2/3 Iteration: 360 Train loss: 0.1078
Epoch: 2/3 Iteration: 365 Train loss: 0.0000
Epoch: 2/3 Iteration: 370 Train loss: 0.0006
Epoch: 2/3 Iteration: 375 Train loss: 0.0008
Val acc: 0.9739
Epoch: 2/3 Iteration: 380 Train loss: 0.1992
Epoch: 2/3 Iteration: 385 Train loss: 0.0001
```

```
Epoch: 2/3 Iteration: 390 Train loss: 0.0015
Epoch: 2/3 Iteration: 395 Train loss: 0.0005
Epoch: 2/3 Iteration: 400 Train loss: 0.1931
Val acc: 0.9739
Epoch: 2/3 Iteration: 405 Train loss: 0.0066
Epoch: 2/3 Iteration: 410 Train loss: 0.0005
Epoch: 2/3 Iteration: 415 Train loss: 0.0003
Epoch: 2/3 Iteration: 420 Train loss: 0.0000
Val acc for epoch 2 = 0.9739
Epoch: 3/3 Iteration: 425 Train loss: 0.2073
Val acc: 0.9739
Epoch: 3/3 Iteration: 430 Train loss: 0.0000
Epoch: 3/3 Iteration: 435 Train loss: 0.0002
Epoch: 3/3 Iteration: 440 Train loss: 0.1588
Epoch: 3/3 Iteration: 445 Train loss: 0.0000
Epoch: 3/3 Iteration: 450 Train loss: 0.3931
Val acc: 0.9130
Epoch: 3/3 Iteration: 455 Train loss: 0.0002
Epoch: 3/3 Iteration: 460 Train loss: 0.0002
Epoch: 3/3 Iteration: 465 Train loss: 0.0001
Epoch: 3/3 Iteration: 470 Train loss: 0.1996
Epoch: 3/3 Iteration: 475 Train loss: 0.1999
Val acc: 0.9565
Epoch: 3/3 Iteration: 480 Train loss: 0.0120
Epoch: 3/3 Iteration: 485 Train loss: 0.0008
Epoch: 3/3 Iteration: 490 Train loss: 0.0008
Epoch: 3/3 Iteration: 495 Train loss: 0.0004
Epoch: 3/3 Iteration: 500 Train loss: 0.0024
Val acc: 0.9565
Epoch: 3/3 Iteration: 505 Train loss: 0.1597
Epoch: 3/3 Iteration: 510 Train loss: 0.0043
Epoch: 3/3 Iteration: 515 Train loss: 0.0043
Epoch: 3/3 Iteration: 520 Train loss: 0.0001
Epoch: 3/3 Iteration: 525 Train loss: 0.0810
Val acc: 0.9739
Epoch: 3/3 Iteration: 530 Train loss: 0.0014
Epoch: 3/3 Iteration: 535 Train loss: 0.0000
Epoch: 3/3 Iteration: 540 Train loss: 0.0000
Epoch: 3/3 Iteration: 545 Train loss: 0.0003
Epoch: 3/3 Iteration: 550 Train loss: 0.0004
Val acc: 0.9739
Epoch: 3/3 Iteration: 555 Train loss: 0.0353
Epoch: 3/3 Iteration: 560 Train loss: 0.0121
Epoch: 3/3 Iteration: 565 Train loss: 0.0027
Epoch: 3/3 Iteration: 570 Train loss: 0.0455
Epoch: 3/3 Iteration: 575 Train loss: 0.1920
Val acc: 0.9217
Epoch: 3/3 Iteration: 580 Train loss: 0.0174
```

```
Epoch: 3/3 Iteration: 585 Train loss: 0.0005
Epoch: 3/3 Iteration: 590 Train loss: 0.0001
Epoch: 3/3 Iteration: 595 Train loss: 0.0001
Epoch: 3/3 Iteration: 600 Train loss: 0.0002
Val acc: 0.9478
Epoch: 3/3 Iteration: 605 Train loss: 0.0001
Epoch: 3/3 Iteration: 610 Train loss: 0.0009
Epoch: 3/3 Iteration: 615 Train loss: 0.0002
Epoch: 3/3 Iteration: 620 Train loss: 0.0019
Epoch: 3/3 Iteration: 625 Train loss: 0.0365
Val acc: 0.9478
Epoch: 3/3 Iteration: 630 Train loss: 0.0002
Val acc for epoch 3 = 0.9478
Val acc for fold = 0.9478
--------------

Fold - 6 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.1995
Epoch: 1/3 Iteration: 10 Train loss: 0.2005
Epoch: 1/3 Iteration: 15 Train loss: 0.0000
Epoch: 1/3 Iteration: 20 Train loss: 0.0173
Epoch: 1/3 Iteration: 25 Train loss: 0.1977
Val acc: 0.9565
Epoch: 1/3 Iteration: 30 Train loss: 0.0000
Epoch: 1/3 Iteration: 35 Train loss: 0.0001
Epoch: 1/3 Iteration: 40 Train loss: 0.3505
Epoch: 1/3 Iteration: 45 Train loss: 0.0001
Epoch: 1/3 Iteration: 50 Train loss: 0.0145
Val acc: 0.9913
Epoch: 1/3 Iteration: 55 Train loss: 0.0000
Epoch: 1/3 Iteration: 60 Train loss: 0.0019
Epoch: 1/3 Iteration: 65 Train loss: 0.0000
Epoch: 1/3 Iteration: 70 Train loss: 0.0001
Epoch: 1/3 Iteration: 75 Train loss: 0.0000
Val acc: 0.9826
Epoch: 1/3 Iteration: 80 Train loss: 0.0003
Epoch: 1/3 Iteration: 85 Train loss: 0.0000
Epoch: 1/3 Iteration: 90 Train loss: 0.0001
Epoch: 1/3 Iteration: 95 Train loss: 0.1912
Epoch: 1/3 Iteration: 100 Train loss: 0.0000
Val acc: 1.0000
Epoch: 1/3 Iteration: 105 Train loss: 0.0751
Epoch: 1/3 Iteration: 110 Train loss: 0.0000
Epoch: 1/3 Iteration: 115 Train loss: 0.0001
Epoch: 1/3 Iteration: 120 Train loss: 0.0002
Epoch: 1/3 Iteration: 125 Train loss: 0.0000
```

```
Val acc: 0.9913
Epoch: 1/3 Iteration: 130 Train loss: 0.0024
Epoch: 1/3 Iteration: 135 Train loss: 0.0002
Epoch: 1/3 Iteration: 140 Train loss: 0.0018
Epoch: 1/3 Iteration: 145 Train loss: 0.0002
Epoch: 1/3 Iteration: 150 Train loss: 0.0001
Val acc: 0.8957
Epoch: 1/3 Iteration: 155 Train loss: 0.0001
Epoch: 1/3 Iteration: 160 Train loss: 0.0000
Epoch: 1/3 Iteration: 165 Train loss: 0.0203
Epoch: 1/3 Iteration: 170 Train loss: 0.0000
Epoch: 1/3 Iteration: 175 Train loss: 0.0004
Val acc: 0.9652
Epoch: 1/3 Iteration: 180 Train loss: 0.2168
Epoch: 1/3 Iteration: 185 Train loss: 0.0110
Epoch: 1/3 Iteration: 190 Train loss: 0.0000
Epoch: 1/3 Iteration: 195 Train loss: 0.0117
Epoch: 1/3 Iteration: 200 Train loss: 0.0002
Val acc: 0.9217
Epoch: 1/3 Iteration: 205 Train loss: 0.0000
Epoch: 1/3 Iteration: 210 Train loss: 0.0002
Val acc for epoch 1 = 0.8783
Epoch: 2/3 Iteration: 215 Train loss: 0.0024
Epoch: 2/3 Iteration: 220 Train loss: 0.0371
Epoch: 2/3 Iteration: 225 Train loss: 0.0000
Val acc: 0.9304
Epoch: 2/3 Iteration: 230 Train loss: 0.0003
Epoch: 2/3 Iteration: 235 Train loss: 0.0002
Epoch: 2/3 Iteration: 240 Train loss: 0.0000
Epoch: 2/3 Iteration: 245 Train loss: 0.0020
Epoch: 2/3 Iteration: 250 Train loss: 0.2064
Val acc: 0.9478
Epoch: 2/3 Iteration: 255 Train loss: 0.0000
Epoch: 2/3 Iteration: 260 Train loss: 0.0000
Epoch: 2/3 Iteration: 265 Train loss: 0.0033
Epoch: 2/3 Iteration: 270 Train loss: 0.0000
Epoch: 2/3 Iteration: 275 Train loss: 0.0000
Val acc: 0.9652
Epoch: 2/3 Iteration: 280 Train loss: 0.0008
Epoch: 2/3 Iteration: 285 Train loss: 0.0000
Epoch: 2/3 Iteration: 290 Train loss: 0.0000
Epoch: 2/3 Iteration: 295 Train loss: 0.5306
Epoch: 2/3 Iteration: 300 Train loss: 0.0000
Val acc: 0.8783
Epoch: 2/3 Iteration: 305 Train loss: 0.0000
Epoch: 2/3 Iteration: 310 Train loss: 0.0001
Epoch: 2/3 Iteration: 315 Train loss: 0.0000
Epoch: 2/3 Iteration: 320 Train loss: 0.0711
```

```
Epoch: 2/3 Iteration: 325 Train loss: 0.0000
Val acc: 0.9739
Epoch: 2/3 Iteration: 330 Train loss: 0.0000
Epoch: 2/3 Iteration: 335 Train loss: 0.0001
Epoch: 2/3 Iteration: 340 Train loss: 0.0008
Epoch: 2/3 Iteration: 345 Train loss: 0.0001
Epoch: 2/3 Iteration: 350 Train loss: 0.0048
Val acc: 0.9826
Epoch: 2/3 Iteration: 355 Train loss: 0.0002
Epoch: 2/3 Iteration: 360 Train loss: 0.0010
Epoch: 2/3 Iteration: 365 Train loss: 0.0000
Epoch: 2/3 Iteration: 370 Train loss: 0.0030
Epoch: 2/3 Iteration: 375 Train loss: 0.0001
Val acc: 0.9130
Epoch: 2/3 Iteration: 380 Train loss: 0.1993
Epoch: 2/3 Iteration: 385 Train loss: 0.0000
Epoch: 2/3 Iteration: 390 Train loss: 0.0000
Epoch: 2/3 Iteration: 395 Train loss: 0.0009
Epoch: 2/3 Iteration: 400 Train loss: 0.1792
Val acc: 0.9478
Epoch: 2/3 Iteration: 405 Train loss: 0.0002
Epoch: 2/3 Iteration: 410 Train loss: 0.0000
Epoch: 2/3 Iteration: 415 Train loss: 0.1196
Epoch: 2/3 Iteration: 420 Train loss: 0.0000
Val acc for epoch 2 = 0.8870
Epoch: 3/3 Iteration: 425 Train loss: 0.1761
Val acc: 0.8783
Epoch: 3/3 Iteration: 430 Train loss: 0.0001
Epoch: 3/3 Iteration: 435 Train loss: 0.0004
Epoch: 3/3 Iteration: 440 Train loss: 0.0547
Epoch: 3/3 Iteration: 445 Train loss: 0.0000
Epoch: 3/3 Iteration: 450 Train loss: 0.1964
Val acc: 0.9652
Epoch: 3/3 Iteration: 455 Train loss: 0.0002
Epoch: 3/3 Iteration: 460 Train loss: 0.0000
Epoch: 3/3 Iteration: 465 Train loss: 0.0000
Epoch: 3/3 Iteration: 470 Train loss: 0.1997
Epoch: 3/3 Iteration: 475 Train loss: 0.1989
Val acc: 0.9565
Epoch: 3/3 Iteration: 480 Train loss: 0.0012
Epoch: 3/3 Iteration: 485 Train loss: 0.0000
Epoch: 3/3 Iteration: 490 Train loss: 0.0010
Epoch: 3/3 Iteration: 495 Train loss: 0.0000
Epoch: 3/3 Iteration: 500 Train loss: 0.0000
Val acc: 0.9478
Epoch: 3/3 Iteration: 505 Train loss: 0.0031
Epoch: 3/3 Iteration: 510 Train loss: 0.0000
Epoch: 3/3 Iteration: 515 Train loss: 0.0000
```

```
Epoch: 3/3 Iteration: 520 Train loss: 0.0001
Epoch: 3/3 Iteration: 525 Train loss: 0.0001
Val acc: 0.9565
Epoch: 3/3 Iteration: 530 Train loss: 0.0000
Epoch: 3/3 Iteration: 535 Train loss: 0.0005
Epoch: 3/3 Iteration: 540 Train loss: 0.0000
Epoch: 3/3 Iteration: 545 Train loss: 0.0012
Epoch: 3/3 Iteration: 550 Train loss: 0.0005
Val acc: 0.9739
Epoch: 3/3 Iteration: 555 Train loss: 0.0000
Epoch: 3/3 Iteration: 560 Train loss: 0.0000
Epoch: 3/3 Iteration: 565 Train loss: 0.0001
Epoch: 3/3 Iteration: 570 Train loss: 0.0025
Epoch: 3/3 Iteration: 575 Train loss: 0.0345
Val acc: 0.9739
Epoch: 3/3 Iteration: 580 Train loss: 0.0002
Epoch: 3/3 Iteration: 585 Train loss: 0.0000
Epoch: 3/3 Iteration: 590 Train loss: 0.0000
Epoch: 3/3 Iteration: 595 Train loss: 0.0000
Epoch: 3/3 Iteration: 600 Train loss: 0.0421
Val acc: 0.8870
Epoch: 3/3 Iteration: 605 Train loss: 0.0000
Epoch: 3/3 Iteration: 610 Train loss: 0.0001
Epoch: 3/3 Iteration: 615 Train loss: 0.0000
Epoch: 3/3 Iteration: 620 Train loss: 0.0003
Epoch: 3/3 Iteration: 625 Train loss: 0.0000
Val acc: 0.9478
Epoch: 3/3 Iteration: 630 Train loss: 0.0001
Val acc for epoch 3 = 0.9478
Val acc for fold = 0.9478
--------------

Fold - 7 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.2000
Epoch: 1/3 Iteration: 10 Train loss: 0.3192
Epoch: 1/3 Iteration: 15 Train loss: 0.0000
Epoch: 1/3 Iteration: 20 Train loss: 0.0000
Epoch: 1/3 Iteration: 25 Train loss: 0.0018
Val acc: 0.9652
Epoch: 1/3 Iteration: 30 Train loss: 0.0001
Epoch: 1/3 Iteration: 35 Train loss: 0.0000
Epoch: 1/3 Iteration: 40 Train loss: 0.1974
Epoch: 1/3 Iteration: 45 Train loss: 0.0000
Epoch: 1/3 Iteration: 50 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 55 Train loss: 0.0000
```

```
Epoch: 1/3 Iteration: 60 Train loss: 0.0001
Epoch: 1/3 Iteration: 65 Train loss: 0.0001
Epoch: 1/3 Iteration: 70 Train loss: 0.0000
Epoch: 1/3 Iteration: 75 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 80 Train loss: 0.0001
Epoch: 1/3 Iteration: 85 Train loss: 0.0000
Epoch: 1/3 Iteration: 90 Train loss: 0.0000
Epoch: 1/3 Iteration: 95 Train loss: 0.0018
Epoch: 1/3 Iteration: 100 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 105 Train loss: 0.0001
Epoch: 1/3 Iteration: 110 Train loss: 0.0000
Epoch: 1/3 Iteration: 115 Train loss: 0.0001
Epoch: 1/3 Iteration: 120 Train loss: 0.0000
Epoch: 1/3 Iteration: 125 Train loss: 0.0003
Val acc: 0.9913
Epoch: 1/3 Iteration: 130 Train loss: 0.0000
Epoch: 1/3 Iteration: 135 Train loss: 0.0000
Epoch: 1/3 Iteration: 140 Train loss: 0.0004
Epoch: 1/3 Iteration: 145 Train loss: 0.0000
Epoch: 1/3 Iteration: 150 Train loss: 0.1537
Val acc: 0.9913
Epoch: 1/3 Iteration: 155 Train loss: 0.0001
Epoch: 1/3 Iteration: 160 Train loss: 0.0003
Epoch: 1/3 Iteration: 165 Train loss: 0.0338
Epoch: 1/3 Iteration: 170 Train loss: 0.0001
Epoch: 1/3 Iteration: 175 Train loss: 0.1461
Val acc: 0.9565
Epoch: 1/3 Iteration: 180 Train loss: 0.0006
Epoch: 1/3 Iteration: 185 Train loss: 0.0469
Epoch: 1/3 Iteration: 190 Train loss: 0.0000
Epoch: 1/3 Iteration: 195 Train loss: 0.0000
Epoch: 1/3 Iteration: 200 Train loss: 0.0040
Val acc: 0.9391
Epoch: 1/3 Iteration: 205 Train loss: 0.0000
Epoch: 1/3 Iteration: 210 Train loss: 0.0110
Val acc for epoch 1 = 0.9217
Epoch: 2/3 Iteration: 215 Train loss: 0.0386
Epoch: 2/3 Iteration: 220 Train loss: 0.1916
Epoch: 2/3 Iteration: 225 Train loss: 0.0005
Val acc: 0.9043
Epoch: 2/3 Iteration: 230 Train loss: 0.0007
Epoch: 2/3 Iteration: 235 Train loss: 0.1854
Epoch: 2/3 Iteration: 240 Train loss: 0.0002
Epoch: 2/3 Iteration: 245 Train loss: 0.0001
Epoch: 2/3 Iteration: 250 Train loss: 0.0000
Val acc: 0.9391
```

```
Epoch: 2/3 Iteration: 255 Train loss: 0.0000
Epoch: 2/3 Iteration: 260 Train loss: 0.0000
Epoch: 2/3 Iteration: 265 Train loss: 0.1814
Epoch: 2/3 Iteration: 270 Train loss: 0.0000
Epoch: 2/3 Iteration: 275 Train loss: 0.0534
Val acc: 0.9652
Epoch: 2/3 Iteration: 280 Train loss: 0.0001
Epoch: 2/3 Iteration: 285 Train loss: 0.0088
Epoch: 2/3 Iteration: 290 Train loss: 0.0000
Epoch: 2/3 Iteration: 295 Train loss: 0.0003
Epoch: 2/3 Iteration: 300 Train loss: 0.0001
Val acc: 0.9652
Epoch: 2/3 Iteration: 305 Train loss: 0.0004
Epoch: 2/3 Iteration: 310 Train loss: 0.0000
Epoch: 2/3 Iteration: 315 Train loss: 0.0006
Epoch: 2/3 Iteration: 320 Train loss: 0.0003
Epoch: 2/3 Iteration: 325 Train loss: 0.0000
Val acc: 0.9826
Epoch: 2/3 Iteration: 330 Train loss: 0.0206
Epoch: 2/3 Iteration: 335 Train loss: 0.1471
Epoch: 2/3 Iteration: 340 Train loss: 0.0000
Epoch: 2/3 Iteration: 345 Train loss: 0.0001
Epoch: 2/3 Iteration: 350 Train loss: 0.0000
Val acc: 0.9739
Epoch: 2/3 Iteration: 355 Train loss: 0.0002
Epoch: 2/3 Iteration: 360 Train loss: 0.0419
Epoch: 2/3 Iteration: 365 Train loss: 0.0000
Epoch: 2/3 Iteration: 370 Train loss: 0.0001
Epoch: 2/3 Iteration: 375 Train loss: 0.0004
Val acc: 0.9565
Epoch: 2/3 Iteration: 380 Train loss: 0.1975
Epoch: 2/3 Iteration: 385 Train loss: 0.0001
Epoch: 2/3 Iteration: 390 Train loss: 0.0001
Epoch: 2/3 Iteration: 395 Train loss: 0.0011
Epoch: 2/3 Iteration: 400 Train loss: 0.0256
Val acc: 0.9478
Epoch: 2/3 Iteration: 405 Train loss: 0.0026
Epoch: 2/3 Iteration: 410 Train loss: 0.0001
Epoch: 2/3 Iteration: 415 Train loss: 0.0001
Epoch: 2/3 Iteration: 420 Train loss: 0.0002
Val acc for epoch 2 = 0.9391
Epoch: 3/3 Iteration: 425 Train loss: 0.0000
Val acc: 0.9391
Epoch: 3/3 Iteration: 430 Train loss: 0.0000
Epoch: 3/3 Iteration: 435 Train loss: 0.0000
Epoch: 3/3 Iteration: 440 Train loss: 0.0001
Epoch: 3/3 Iteration: 445 Train loss: 0.0035
Epoch: 3/3 Iteration: 450 Train loss: 0.1999
```

```
Val acc: 0.9391
Epoch: 3/3 Iteration: 455 Train loss: 0.0002
Epoch: 3/3 Iteration: 460 Train loss: 0.0000
Epoch: 3/3 Iteration: 465 Train loss: 0.0001
Epoch: 3/3 Iteration: 470 Train loss: 0.1999
Epoch: 3/3 Iteration: 475 Train loss: 0.1986
Val acc: 0.9478
Epoch: 3/3 Iteration: 480 Train loss: 0.0005
Epoch: 3/3 Iteration: 485 Train loss: 0.0004
Epoch: 3/3 Iteration: 490 Train loss: 0.1969
Epoch: 3/3 Iteration: 495 Train loss: 0.0000
Epoch: 3/3 Iteration: 500 Train loss: 0.0000
Val acc: 0.9565
Epoch: 3/3 Iteration: 505 Train loss: 0.1811
Epoch: 3/3 Iteration: 510 Train loss: 0.0000
Epoch: 3/3 Iteration: 515 Train loss: 0.0000
Epoch: 3/3 Iteration: 520 Train loss: 0.0000
Epoch: 3/3 Iteration: 525 Train loss: 0.0001
Val acc: 0.9739
Epoch: 3/3 Iteration: 530 Train loss: 0.0000
Epoch: 3/3 Iteration: 535 Train loss: 0.0006
Epoch: 3/3 Iteration: 540 Train loss: 0.0000
Epoch: 3/3 Iteration: 545 Train loss: 0.0001
Epoch: 3/3 Iteration: 550 Train loss: 0.0018
Val acc: 0.9652
Epoch: 3/3 Iteration: 555 Train loss: 0.0553
Epoch: 3/3 Iteration: 560 Train loss: 0.0000
Epoch: 3/3 Iteration: 565 Train loss: 0.0022
Epoch: 3/3 Iteration: 570 Train loss: 0.0005
Epoch: 3/3 Iteration: 575 Train loss: 0.0007
Val acc: 0.9739
Epoch: 3/3 Iteration: 580 Train loss: 0.0160
Epoch: 3/3 Iteration: 585 Train loss: 0.0001
Epoch: 3/3 Iteration: 590 Train loss: 0.0000
Epoch: 3/3 Iteration: 595 Train loss: 0.0001
Epoch: 3/3 Iteration: 600 Train loss: 0.0000
Val acc: 0.9391
Epoch: 3/3 Iteration: 605 Train loss: 0.0000
Epoch: 3/3 Iteration: 610 Train loss: 0.0001
Epoch: 3/3 Iteration: 615 Train loss: 0.0004
Epoch: 3/3 Iteration: 620 Train loss: 0.0000
Epoch: 3/3 Iteration: 625 Train loss: 0.0003
Val acc: 0.9565
Epoch: 3/3 Iteration: 630 Train loss: 0.0113
Val acc for epoch 3 = 0.9565
Val acc for fold = 0.9565
--------------
```

```
Fold - 8 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.2000
Epoch: 1/3 Iteration: 10 Train loss: 0.1992
Epoch: 1/3 Iteration: 15 Train loss: 0.0966
Epoch: 1/3 Iteration: 20 Train loss: 0.0126
Epoch: 1/3 Iteration: 25 Train loss: 0.0265
Val acc: 0.9739
Epoch: 1/3 Iteration: 30 Train loss: 0.1029
Epoch: 1/3 Iteration: 35 Train loss: 0.0005
Epoch: 1/3 Iteration: 40 Train loss: 0.1969
Epoch: 1/3 Iteration: 45 Train loss: 0.0000
Epoch: 1/3 Iteration: 50 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 55 Train loss: 0.0000
Epoch: 1/3 Iteration: 60 Train loss: 0.0002
Epoch: 1/3 Iteration: 65 Train loss: 0.0044
Epoch: 1/3 Iteration: 70 Train loss: 0.0000
Epoch: 1/3 Iteration: 75 Train loss: 0.1585
Val acc: 0.9913
Epoch: 1/3 Iteration: 80 Train loss: 0.0000
Epoch: 1/3 Iteration: 85 Train loss: 0.0000
Epoch: 1/3 Iteration: 90 Train loss: 0.0001
Epoch: 1/3 Iteration: 95 Train loss: 0.0000
Epoch: 1/3 Iteration: 100 Train loss: 0.0001
Val acc: 1.0000
Epoch: 1/3 Iteration: 105 Train loss: 0.0003
Epoch: 1/3 Iteration: 110 Train loss: 0.0008
Epoch: 1/3 Iteration: 115 Train loss: 0.0001
Epoch: 1/3 Iteration: 120 Train loss: 0.0000
Epoch: 1/3 Iteration: 125 Train loss: 0.1103
Val acc: 1.0000
Epoch: 1/3 Iteration: 130 Train loss: 0.0000
Epoch: 1/3 Iteration: 135 Train loss: 0.0000
Epoch: 1/3 Iteration: 140 Train loss: 0.0001
Epoch: 1/3 Iteration: 145 Train loss: 0.2000
Epoch: 1/3 Iteration: 150 Train loss: 0.0000
Val acc: 0.9217
Epoch: 1/3 Iteration: 155 Train loss: 0.0000
Epoch: 1/3 Iteration: 160 Train loss: 0.0000
Epoch: 1/3 Iteration: 165 Train loss: 0.1491
Epoch: 1/3 Iteration: 170 Train loss: 0.0000
Epoch: 1/3 Iteration: 175 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 180 Train loss: 0.0010
Epoch: 1/3 Iteration: 185 Train loss: 0.0000
Epoch: 1/3 Iteration: 190 Train loss: 0.0001
```

```
Epoch: 1/3 Iteration: 195 Train loss: 0.0002
Epoch: 1/3 Iteration: 200 Train loss: 0.0011
Val acc: 0.9913
Epoch: 1/3 Iteration: 205 Train loss: 0.0000
Epoch: 1/3 Iteration: 210 Train loss: 0.0000
Val acc for epoch 1 = 0.9913
Epoch: 2/3 Iteration: 215 Train loss: 0.0038
Epoch: 2/3 Iteration: 220 Train loss: 0.0000
Epoch: 2/3 Iteration: 225 Train loss: 0.0000
Val acc: 0.9913
Epoch: 2/3 Iteration: 230 Train loss: 0.0000
Epoch: 2/3 Iteration: 235 Train loss: 0.0000
Epoch: 2/3 Iteration: 240 Train loss: 0.0000
Epoch: 2/3 Iteration: 245 Train loss: 0.0024
Epoch: 2/3 Iteration: 250 Train loss: 0.0000
Val acc: 0.9913
Epoch: 2/3 Iteration: 255 Train loss: 0.0102
Epoch: 2/3 Iteration: 260 Train loss: 0.0016
Epoch: 2/3 Iteration: 265 Train loss: 0.0000
Epoch: 2/3 Iteration: 270 Train loss: 0.0000
Epoch: 2/3 Iteration: 275 Train loss: 0.0006
Val acc: 0.9913
Epoch: 2/3 Iteration: 280 Train loss: 0.0000
Epoch: 2/3 Iteration: 285 Train loss: 0.0003
Epoch: 2/3 Iteration: 290 Train loss: 0.0001
Epoch: 2/3 Iteration: 295 Train loss: 0.0004
Epoch: 2/3 Iteration: 300 Train loss: 0.0002
Val acc: 0.9913
Epoch: 2/3 Iteration: 305 Train loss: 0.0001
Epoch: 2/3 Iteration: 310 Train loss: 0.0000
Epoch: 2/3 Iteration: 315 Train loss: 0.1362
Epoch: 2/3 Iteration: 320 Train loss: 0.0959
Epoch: 2/3 Iteration: 325 Train loss: 0.0000
Val acc: 0.9913
Epoch: 2/3 Iteration: 330 Train loss: 0.1683
Epoch: 2/3 Iteration: 335 Train loss: 0.0000
Epoch: 2/3 Iteration: 340 Train loss: 0.0000
Epoch: 2/3 Iteration: 345 Train loss: 0.0000
Epoch: 2/3 Iteration: 350 Train loss: 0.0000
Val acc: 0.9478
Epoch: 2/3 Iteration: 355 Train loss: 0.0000
Epoch: 2/3 Iteration: 360 Train loss: 0.0000
Epoch: 2/3 Iteration: 365 Train loss: 0.0066
Epoch: 2/3 Iteration: 370 Train loss: 0.0000
Epoch: 2/3 Iteration: 375 Train loss: 0.0001
Val acc: 0.8609
Epoch: 2/3 Iteration: 380 Train loss: 0.1975
Epoch: 2/3 Iteration: 385 Train loss: 0.0000
```

```
Epoch: 2/3 Iteration: 390 Train loss: 0.0000
Epoch: 2/3 Iteration: 395 Train loss: 0.0735
Epoch: 2/3 Iteration: 400 Train loss: 0.0000
Val acc: 0.9913
Epoch: 2/3 Iteration: 405 Train loss: 0.1631
Epoch: 2/3 Iteration: 410 Train loss: 0.0004
Epoch: 2/3 Iteration: 415 Train loss: 0.0001
Epoch: 2/3 Iteration: 420 Train loss: 0.0001
Val acc for epoch 2 = 0.9913
Epoch: 3/3 Iteration: 425 Train loss: 0.0041
Val acc: 0.9913
Epoch: 3/3 Iteration: 430 Train loss: 0.0002
Epoch: 3/3 Iteration: 435 Train loss: 0.0000
Epoch: 3/3 Iteration: 440 Train loss: 0.0061
Epoch: 3/3 Iteration: 445 Train loss: 0.0064
Epoch: 3/3 Iteration: 450 Train loss: 0.1999
Val acc: 0.9913
Epoch: 3/3 Iteration: 455 Train loss: 0.0004
Epoch: 3/3 Iteration: 460 Train loss: 0.0001
Epoch: 3/3 Iteration: 465 Train loss: 0.0002
Epoch: 3/3 Iteration: 470 Train loss: 0.2000
Epoch: 3/3 Iteration: 475 Train loss: 0.1469
Val acc: 0.9739
Epoch: 3/3 Iteration: 480 Train loss: 0.0004
Epoch: 3/3 Iteration: 485 Train loss: 0.0000
Epoch: 3/3 Iteration: 490 Train loss: 0.0001
Epoch: 3/3 Iteration: 495 Train loss: 0.0018
Epoch: 3/3 Iteration: 500 Train loss: 0.0000
Val acc: 0.9739
Epoch: 3/3 Iteration: 505 Train loss: 0.0176
Epoch: 3/3 Iteration: 510 Train loss: 0.0001
Epoch: 3/3 Iteration: 515 Train loss: 0.0000
Epoch: 3/3 Iteration: 520 Train loss: 0.0000
Epoch: 3/3 Iteration: 525 Train loss: 0.0931
Val acc: 0.9913
Epoch: 3/3 Iteration: 530 Train loss: 0.0000
Epoch: 3/3 Iteration: 535 Train loss: 0.0000
Epoch: 3/3 Iteration: 540 Train loss: 0.0000
Epoch: 3/3 Iteration: 545 Train loss: 0.0000
Epoch: 3/3 Iteration: 550 Train loss: 0.0064
Val acc: 0.9565
Epoch: 3/3 Iteration: 555 Train loss: 0.0000
Epoch: 3/3 Iteration: 560 Train loss: 0.0000
Epoch: 3/3 Iteration: 565 Train loss: 0.0000
Epoch: 3/3 Iteration: 570 Train loss: 0.0000
Epoch: 3/3 Iteration: 575 Train loss: 0.0000
Val acc: 0.9739
Epoch: 3/3 Iteration: 580 Train loss: 0.0000
```

```
Epoch: 3/3 Iteration: 585 Train loss: 0.0000
Epoch: 3/3 Iteration: 590 Train loss: 0.0000
Epoch: 3/3 Iteration: 595 Train loss: 0.0001
Epoch: 3/3 Iteration: 600 Train loss: 0.0002
Val acc: 0.9043
Epoch: 3/3 Iteration: 605 Train loss: 0.0000
Epoch: 3/3 Iteration: 610 Train loss: 0.0004
Epoch: 3/3 Iteration: 615 Train loss: 0.0000
Epoch: 3/3 Iteration: 620 Train loss: 0.0001
Epoch: 3/3 Iteration: 625 Train loss: 0.0001
Val acc: 0.9913
Epoch: 3/3 Iteration: 630 Train loss: 0.0001
Val acc for epoch 3 = 0.9913
Val acc for fold = 0.9913
--------------

Fold - 9 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.2000
Epoch: 1/3 Iteration: 10 Train loss: 0.1998
Epoch: 1/3 Iteration: 15 Train loss: 0.0006
Epoch: 1/3 Iteration: 20 Train loss: 0.0000
Epoch: 1/3 Iteration: 25 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 30 Train loss: 0.0000
Epoch: 1/3 Iteration: 35 Train loss: 0.0814
Epoch: 1/3 Iteration: 40 Train loss: 0.1990
Epoch: 1/3 Iteration: 45 Train loss: 0.0000
Epoch: 1/3 Iteration: 50 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 55 Train loss: 0.0000
Epoch: 1/3 Iteration: 60 Train loss: 0.0000
Epoch: 1/3 Iteration: 65 Train loss: 0.0009
Epoch: 1/3 Iteration: 70 Train loss: 0.0000
Epoch: 1/3 Iteration: 75 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 80 Train loss: 0.0000
Epoch: 1/3 Iteration: 85 Train loss: 0.0002
Epoch: 1/3 Iteration: 90 Train loss: 0.0000
Epoch: 1/3 Iteration: 95 Train loss: 0.0825
Epoch: 1/3 Iteration: 100 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 105 Train loss: 0.0001
Epoch: 1/3 Iteration: 110 Train loss: 0.0001
Epoch: 1/3 Iteration: 115 Train loss: 0.0000
Epoch: 1/3 Iteration: 120 Train loss: 0.0000
Epoch: 1/3 Iteration: 125 Train loss: 0.0713
```

```
Val acc: 0.9913
Epoch: 1/3 Iteration: 130 Train loss: 0.0000
Epoch: 1/3 Iteration: 135 Train loss: 0.0032
Epoch: 1/3 Iteration: 140 Train loss: 0.0006
Epoch: 1/3 Iteration: 145 Train loss: 0.1997
Epoch: 1/3 Iteration: 150 Train loss: 0.0001
Val acc: 0.9913
Epoch: 1/3 Iteration: 155 Train loss: 0.0000
Epoch: 1/3 Iteration: 160 Train loss: 0.0000
Epoch: 1/3 Iteration: 165 Train loss: 0.0000
Epoch: 1/3 Iteration: 170 Train loss: 0.0000
Epoch: 1/3 Iteration: 175 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 180 Train loss: 0.0000
Epoch: 1/3 Iteration: 185 Train loss: 0.0769
Epoch: 1/3 Iteration: 190 Train loss: 0.0152
Epoch: 1/3 Iteration: 195 Train loss: 0.0001
Epoch: 1/3 Iteration: 200 Train loss: 0.0001
Val acc: 0.9739
Epoch: 1/3 Iteration: 205 Train loss: 0.0341
Epoch: 1/3 Iteration: 210 Train loss: 0.0001
Val acc for epoch 1 = 0.9913
Epoch: 2/3 Iteration: 215 Train loss: 0.0001
Epoch: 2/3 Iteration: 220 Train loss: 0.0000
Epoch: 2/3 Iteration: 225 Train loss: 0.1996
Val acc: 0.9913
Epoch: 2/3 Iteration: 230 Train loss: 0.2002
Epoch: 2/3 Iteration: 235 Train loss: 0.0000
Epoch: 2/3 Iteration: 240 Train loss: 0.0011
Epoch: 2/3 Iteration: 245 Train loss: 0.0004
Epoch: 2/3 Iteration: 250 Train loss: 0.0006
Val acc: 0.9826
Epoch: 2/3 Iteration: 255 Train loss: 0.0001
Epoch: 2/3 Iteration: 260 Train loss: 0.1849
Epoch: 2/3 Iteration: 265 Train loss: 0.0001
Epoch: 2/3 Iteration: 270 Train loss: 0.0002
Epoch: 2/3 Iteration: 275 Train loss: 0.0000
Val acc: 0.9652
Epoch: 2/3 Iteration: 280 Train loss: 0.0001
Epoch: 2/3 Iteration: 285 Train loss: 0.0001
Epoch: 2/3 Iteration: 290 Train loss: 0.0000
Epoch: 2/3 Iteration: 295 Train loss: 0.0001
Epoch: 2/3 Iteration: 300 Train loss: 0.0020
Val acc: 0.9652
Epoch: 2/3 Iteration: 305 Train loss: 0.0000
Epoch: 2/3 Iteration: 310 Train loss: 0.0000
Epoch: 2/3 Iteration: 315 Train loss: 0.0000
Epoch: 2/3 Iteration: 320 Train loss: 0.0031
```

```
Epoch: 2/3 Iteration: 325 Train loss: 0.0000
Val acc: 0.9652
Epoch: 2/3 Iteration: 330 Train loss: 0.0000
Epoch: 2/3 Iteration: 335 Train loss: 0.1094
Epoch: 2/3 Iteration: 340 Train loss: 0.0001
Epoch: 2/3 Iteration: 345 Train loss: 0.0000
Epoch: 2/3 Iteration: 350 Train loss: 0.0037
Val acc: 0.9652
Epoch: 2/3 Iteration: 355 Train loss: 0.3862
Epoch: 2/3 Iteration: 360 Train loss: 0.0320
Epoch: 2/3 Iteration: 365 Train loss: 0.0056
Epoch: 2/3 Iteration: 370 Train loss: 0.0000
Epoch: 2/3 Iteration: 375 Train loss: 0.0000
Val acc: 0.9826
Epoch: 2/3 Iteration: 380 Train loss: 0.0000
Epoch: 2/3 Iteration: 385 Train loss: 0.0000
Epoch: 2/3 Iteration: 390 Train loss: 0.0884
Epoch: 2/3 Iteration: 395 Train loss: 0.0001
Epoch: 2/3 Iteration: 400 Train loss: 0.0000
Val acc: 0.9826
Epoch: 2/3 Iteration: 405 Train loss: 0.0000
Epoch: 2/3 Iteration: 410 Train loss: 0.0004
Epoch: 2/3 Iteration: 415 Train loss: 0.0000
Epoch: 2/3 Iteration: 420 Train loss: 0.0000
Val acc for epoch 2 = 0.9826
Epoch: 3/3 Iteration: 425 Train loss: 0.0000
Val acc: 0.9826
Epoch: 3/3 Iteration: 430 Train loss: 0.0000
Epoch: 3/3 Iteration: 435 Train loss: 0.0001
Epoch: 3/3 Iteration: 440 Train loss: 0.0002
Epoch: 3/3 Iteration: 445 Train loss: 0.0000
Epoch: 3/3 Iteration: 450 Train loss: 0.1988
Val acc: 0.9913
Epoch: 3/3 Iteration: 455 Train loss: 0.0000
Epoch: 3/3 Iteration: 460 Train loss: 0.0000
Epoch: 3/3 Iteration: 465 Train loss: 0.0000
Epoch: 3/3 Iteration: 470 Train loss: 0.1991
Epoch: 3/3 Iteration: 475 Train loss: 0.0000
Val acc: 0.9913
Epoch: 3/3 Iteration: 480 Train loss: 0.0002
Epoch: 3/3 Iteration: 485 Train loss: 0.0000
Epoch: 3/3 Iteration: 490 Train loss: 0.0001
Epoch: 3/3 Iteration: 495 Train loss: 0.0000
Epoch: 3/3 Iteration: 500 Train loss: 0.0000
Val acc: 0.9826
Epoch: 3/3 Iteration: 505 Train loss: 0.0028
Epoch: 3/3 Iteration: 510 Train loss: 0.0002
Epoch: 3/3 Iteration: 515 Train loss: 0.0002
```

```
Epoch: 3/3 Iteration: 520 Train loss: 0.0034
Epoch: 3/3 Iteration: 525 Train loss: 0.0001
Val acc: 0.9826
Epoch: 3/3 Iteration: 530 Train loss: 0.0000
Epoch: 3/3 Iteration: 535 Train loss: 0.0000
Epoch: 3/3 Iteration: 540 Train loss: 0.1181
Epoch: 3/3 Iteration: 545 Train loss: 0.0001
Epoch: 3/3 Iteration: 550 Train loss: 0.0020
Val acc: 0.9826
Epoch: 3/3 Iteration: 555 Train loss: 0.0000
Epoch: 3/3 Iteration: 560 Train loss: 0.0000
Epoch: 3/3 Iteration: 565 Train loss: 0.0000
Epoch: 3/3 Iteration: 570 Train loss: 0.0001
Epoch: 3/3 Iteration: 575 Train loss: 0.0000
Val acc: 0.9826
Epoch: 3/3 Iteration: 580 Train loss: 0.0000
Epoch: 3/3 Iteration: 585 Train loss: 0.0000
Epoch: 3/3 Iteration: 590 Train loss: 0.0000
Epoch: 3/3 Iteration: 595 Train loss: 0.0004
Epoch: 3/3 Iteration: 600 Train loss: 0.0000
Val acc: 0.9739
Epoch: 3/3 Iteration: 605 Train loss: 0.0000
Epoch: 3/3 Iteration: 610 Train loss: 0.0001
Epoch: 3/3 Iteration: 615 Train loss: 0.0000
Epoch: 3/3 Iteration: 620 Train loss: 0.0000
Epoch: 3/3 Iteration: 625 Train loss: 0.0006
Val acc: 0.9739
Epoch: 3/3 Iteration: 630 Train loss: 0.0001
Val acc for epoch 3 = 0.9826
Val acc for fold = 0.9826
--------------

Fold - 10 out of 10 ::
--------------
Training on 1059 samples & validating on 117 samples with batch size 5 .
Epoch: 1/3 Iteration: 5 Train loss: 0.1991
Epoch: 1/3 Iteration: 10 Train loss: 0.1997
Epoch: 1/3 Iteration: 15 Train loss: 0.0970
Epoch: 1/3 Iteration: 20 Train loss: 0.0000
Epoch: 1/3 Iteration: 25 Train loss: 0.0000
Val acc: 1.0000
Epoch: 1/3 Iteration: 30 Train loss: 0.0000
Epoch: 1/3 Iteration: 35 Train loss: 0.0000
Epoch: 1/3 Iteration: 40 Train loss: 0.1962
Epoch: 1/3 Iteration: 45 Train loss: 0.0000
Epoch: 1/3 Iteration: 50 Train loss: 0.0000
Val acc: 1.0000
Epoch: 1/3 Iteration: 55 Train loss: 0.0008
```

```
Epoch: 1/3 Iteration: 60 Train loss: 0.0000
Epoch: 1/3 Iteration: 65 Train loss: 0.0002
Epoch: 1/3 Iteration: 70 Train loss: 0.0000
Epoch: 1/3 Iteration: 75 Train loss: 0.0023
Val acc: 1.0000
Epoch: 1/3 Iteration: 80 Train loss: 0.0000
Epoch: 1/3 Iteration: 85 Train loss: 0.0013
Epoch: 1/3 Iteration: 90 Train loss: 0.0000
Epoch: 1/3 Iteration: 95 Train loss: 0.0012
Epoch: 1/3 Iteration: 100 Train loss: 0.0014
Val acc: 0.9913
Epoch: 1/3 Iteration: 105 Train loss: 0.0003
Epoch: 1/3 Iteration: 110 Train loss: 0.0001
Epoch: 1/3 Iteration: 115 Train loss: 0.0000
Epoch: 1/3 Iteration: 120 Train loss: 0.0001
Epoch: 1/3 Iteration: 125 Train loss: 0.0000
Val acc: 1.0000
Epoch: 1/3 Iteration: 130 Train loss: 0.0000
Epoch: 1/3 Iteration: 135 Train loss: 0.0007
Epoch: 1/3 Iteration: 140 Train loss: 0.1687
Epoch: 1/3 Iteration: 145 Train loss: 0.2000
Epoch: 1/3 Iteration: 150 Train loss: 0.0000
Val acc: 1.0000
Epoch: 1/3 Iteration: 155 Train loss: 0.0000
Epoch: 1/3 Iteration: 160 Train loss: 0.0000
Epoch: 1/3 Iteration: 165 Train loss: 0.0000
Epoch: 1/3 Iteration: 170 Train loss: 0.0000
Epoch: 1/3 Iteration: 175 Train loss: 0.0000
Val acc: 0.9913
Epoch: 1/3 Iteration: 180 Train loss: 0.0000
Epoch: 1/3 Iteration: 185 Train loss: 0.0000
Epoch: 1/3 Iteration: 190 Train loss: 0.0000
Epoch: 1/3 Iteration: 195 Train loss: 0.0000
Epoch: 1/3 Iteration: 200 Train loss: 0.0000
Val acc: 1.0000
Epoch: 1/3 Iteration: 205 Train loss: 0.0000
Epoch: 1/3 Iteration: 210 Train loss: 0.0002
Val acc for epoch 1 = 1.0000
Epoch: 2/3 Iteration: 215 Train loss: 0.0000
Epoch: 2/3 Iteration: 220 Train loss: 0.0003
Epoch: 2/3 Iteration: 225 Train loss: 0.0000
Val acc: 1.0000
Epoch: 2/3 Iteration: 230 Train loss: 0.0001
Epoch: 2/3 Iteration: 235 Train loss: 0.0000
Epoch: 2/3 Iteration: 240 Train loss: 0.0000
Epoch: 2/3 Iteration: 245 Train loss: 0.0003
Epoch: 2/3 Iteration: 250 Train loss: 0.0000
Val acc: 1.0000
```

```
Epoch: 2/3 Iteration: 255 Train loss: 0.0000
Epoch: 2/3 Iteration: 260 Train loss: 0.0000
Epoch: 2/3 Iteration: 265 Train loss: 0.0004
Epoch: 2/3 Iteration: 270 Train loss: 0.0000
Epoch: 2/3 Iteration: 275 Train loss: 0.0000
Val acc: 1.0000
Epoch: 2/3 Iteration: 280 Train loss: 0.0000
Epoch: 2/3 Iteration: 285 Train loss: 0.0667
Epoch: 2/3 Iteration: 290 Train loss: 0.0000
Epoch: 2/3 Iteration: 295 Train loss: 0.0212
Epoch: 2/3 Iteration: 300 Train loss: 0.0000
Val acc: 1.0000
Epoch: 2/3 Iteration: 305 Train loss: 0.0000
Epoch: 2/3 Iteration: 310 Train loss: 0.0000
Epoch: 2/3 Iteration: 315 Train loss: 0.0002
Epoch: 2/3 Iteration: 320 Train loss: 0.0000
Epoch: 2/3 Iteration: 325 Train loss: 0.0000
Val acc: 1.0000
Epoch: 2/3 Iteration: 330 Train loss: 0.0000
Epoch: 2/3 Iteration: 335 Train loss: 0.0000
Epoch: 2/3 Iteration: 340 Train loss: 0.0000
Epoch: 2/3 Iteration: 345 Train loss: 0.0000
Epoch: 2/3 Iteration: 350 Train loss: 0.1996
Val acc: 0.9913
Epoch: 2/3 Iteration: 355 Train loss: 0.0003
Epoch: 2/3 Iteration: 360 Train loss: 0.0001
Epoch: 2/3 Iteration: 365 Train loss: 0.0000
Epoch: 2/3 Iteration: 370 Train loss: 0.1831
Epoch: 2/3 Iteration: 375 Train loss: 0.0000
Val acc: 0.9913
Epoch: 2/3 Iteration: 380 Train loss: 0.0000
Epoch: 2/3 Iteration: 385 Train loss: 0.0001
Epoch: 2/3 Iteration: 390 Train loss: 0.0002
Epoch: 2/3 Iteration: 395 Train loss: 0.0000
Epoch: 2/3 Iteration: 400 Train loss: 0.0000
Val acc: 1.0000
Epoch: 2/3 Iteration: 405 Train loss: 0.0000
Epoch: 2/3 Iteration: 410 Train loss: 0.0000
Epoch: 2/3 Iteration: 415 Train loss: 0.0001
Epoch: 2/3 Iteration: 420 Train loss: 0.0668
Val acc for epoch 2 = 1.0000
Epoch: 3/3 Iteration: 425 Train loss: 0.0000
Val acc: 1.0000
Epoch: 3/3 Iteration: 430 Train loss: 0.0000
Epoch: 3/3 Iteration: 435 Train loss: 0.0000
Epoch: 3/3 Iteration: 440 Train loss: 0.0000
Epoch: 3/3 Iteration: 445 Train loss: 0.0000
Epoch: 3/3 Iteration: 450 Train loss: 0.2021
```

```
Val acc: 1.0000
Epoch: 3/3 Iteration: 455 Train loss: 0.0000
Epoch: 3/3 Iteration: 460 Train loss: 0.0000
Epoch: 3/3 Iteration: 465 Train loss: 0.0000
Epoch: 3/3 Iteration: 470 Train loss: 0.1998
Epoch: 3/3 Iteration: 475 Train loss: 0.0000
Val acc: 1.0000
Epoch: 3/3 Iteration: 480 Train loss: 0.0001
Epoch: 3/3 Iteration: 485 Train loss: 0.0000
Epoch: 3/3 Iteration: 490 Train loss: 0.0000
Epoch: 3/3 Iteration: 495 Train loss: 0.0000
Epoch: 3/3 Iteration: 500 Train loss: 0.0000
Val acc: 1.0000
Epoch: 3/3 Iteration: 505 Train loss: 0.0006
Epoch: 3/3 Iteration: 510 Train loss: 0.0000
Epoch: 3/3 Iteration: 515 Train loss: 0.0000
Epoch: 3/3 Iteration: 520 Train loss: 0.0001
Epoch: 3/3 Iteration: 525 Train loss: 0.0000
Val acc: 1.0000
Epoch: 3/3 Iteration: 530 Train loss: 0.0000
Epoch: 3/3 Iteration: 535 Train loss: 0.0000
Epoch: 3/3 Iteration: 540 Train loss: 0.0000
Epoch: 3/3 Iteration: 545 Train loss: 0.1438
Epoch: 3/3 Iteration: 550 Train loss: 0.0014
Val acc: 1.0000
Epoch: 3/3 Iteration: 555 Train loss: 0.0000
Epoch: 3/3 Iteration: 560 Train loss: 0.0000
Epoch: 3/3 Iteration: 565 Train loss: 0.0014
Epoch: 3/3 Iteration: 570 Train loss: 0.0013
Epoch: 3/3 Iteration: 575 Train loss: 0.0000
Val acc: 1.0000
Epoch: 3/3 Iteration: 580 Train loss: 0.0000
Epoch: 3/3 Iteration: 585 Train loss: 0.0000
Epoch: 3/3 Iteration: 590 Train loss: 0.0000
Epoch: 3/3 Iteration: 595 Train loss: 0.0001
Epoch: 3/3 Iteration: 600 Train loss: 0.0000
Val acc: 1.0000
Epoch: 3/3 Iteration: 605 Train loss: 0.0000
Epoch: 3/3 Iteration: 610 Train loss: 0.0000
Epoch: 3/3 Iteration: 615 Train loss: 0.1991
Epoch: 3/3 Iteration: 620 Train loss: 0.0000
Epoch: 3/3 Iteration: 625 Train loss: 0.0000
Val acc: 1.0000
Epoch: 3/3 Iteration: 630 Train loss: 0.0004
Val acc for epoch 3 = 1.0000
Val acc for fold = 1.0000
--------------
```

```
Time elasped = 20477.14317716 sec(s)
```

```
In [22]: print("Accuracy: {:.3f}".format(np.mean(folds_val_acc)))
```

```
Accuracy: 0.834
```

```
In [23]: for acc in folds_val_acc:
             print("{:.3f}".format(acc))
```

```
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0.400
0.400
0.600
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```
In [0]:
```