

skip-gram

March 20, 2020

1 Introduction

In this homework you will be given a chance to explore the properties of word embedding using a pre-trained embedding. Then you will build and train your own embedding using the skip-gram method.

1.1 Files

- `hw03.ipynb`: Notebook file with starter code
- `plot_summaries_tokenized.txt`: training data for skipgram
- `glove_6B_100d_top100k.csv`: pretrained glove embedding

The training data and glove embedding

1.2 Reading material

1. [Learning representations by back-propagating errors](#)

Recent Turing Reward winner Geoffrey Hinton and coworkers first introduced the concept of words embedding in their 1986 Nature paper.

2. [word2vec](#)

Google's word2vec project built on skip-gram and google news data.

3. [Efficient Estimation of Word Representations in Vector Space](#)

[Distributed Representations of Words and Phrases and their Compositionality](#)

Tomas Mikolov from Google published these two papers in 2013 proposing the skip-gram approach for word embedding which has become one of the most popular word embedding.

4. [On word embeddings](#)

An online blog by DeepMind engineer Sebastian Ruder explaining skip-gram. I found it easier to understand than the original papers.

1.3 Deliverables:

- pdf / html version of your final notebook
- Discuss the questions in Section 3 (Play with pretrained)
- If you have done any work to improve the model and model training, explain it.

HW3 Write Up

Find nearest words

The closest word to '8' are '9' and '7' which is very interesting.

The closest word to google are also technology companies.

Find nearest words with vector

`glove['china']+glove['capital']` 'beijing' is the closest output!

`glove['beijing']-glove['china']+glove['italy']` 'rome' is the closest output! It means this embedding is able to reflect some deep connection/semantics of the words/

skip-gram

I tried to use more layers and regularizations, it turns out the losses for the skip-gram dummy classification problem is not stably going down and keep flat. It fluctuates between 0.3 and 0.4, and the lowest losses is 0.29. Increasing the negative samples or enlarge the window size might make it better.

1.4 =====Coding starts here
=====

2 Required packages

```
In [3]: %matplotlib inline
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import sklearn, keras
import numpy as np
import os, sys

# add utils folder to path
p = os.path.dirname(os.getcwd())
if p not in sys.path:
    sys.path = [p] + sys.path

from utils.hw3 import load_data
from utils.general import show_keras_model
```

3 Play with pretrained embedding

Before we start training our own words embedding, let's play with pretrained embeddings, so you know what you can expect from your own models. Here we use a very popular embedding called [GloVe](#) developed by Stanford University. The method used to produce this embedding is based on

the factorization of word-word similarity matrix. Worth to notice, thi method is quite different to the skip-gram method we are going to implement later.

First let's load the embedding as a Pandas DataFrame.

```
In [4]: glove = pd.read_csv("glove_6B_100d_top100k.csv"); glove.head()
```

```
[4]:
```

	the	,	.	of	to	and	in	\
0	-0.038194	-0.10767	-0.33979	-0.15290	-0.189700	-0.071953	0.085703	
1	-0.244870	0.11053	0.20941	-0.24279	0.050024	0.231270	-0.222010	
2	0.728120	0.59812	0.46348	0.89837	0.190840	0.023731	0.165690	
3	-0.399610	-0.54361	-0.64792	0.16996	-0.049184	-0.506380	0.133730	
4	0.083172	0.67396	-0.38377	0.53516	-0.089737	0.339230	0.382390	

	a	"	's	...	antz	monnaie	copyist	\
0	-0.270860	-0.30457	0.58854	...	0.175470	-0.032896	0.37886	
1	0.044006	-0.23645	-0.20250	...	-0.559680	-0.721960	-0.24468	
2	-0.020260	0.17576	0.73479	...	0.480470	-0.129030	0.45714	
3	-0.173950	-0.72854	-0.68338	...	0.287520	1.169300	0.17411	
4	0.644400	-0.28343	-0.19675	...	-0.021609	0.335410	0.49281	

	toonami	bagration	divo	convulsive	unviable	madhava	autocephalous
0	0.339320	-0.52125	0.20375	0.42829	-0.560580	-0.26374	0.457840
1	-0.266210	-1.09030	-0.07108	0.29863	-0.486880	0.20904	0.154020
2	-0.224130	-0.66645	-0.13259	-0.15156	-0.314340	-1.12440	0.321590
3	-1.158300	0.23457	0.15806	0.21284	-0.174410	0.25690	0.807420
4	-0.083679	0.36971	-0.48602	-0.13771	0.041936	-0.71330	-0.074811

[5 rows x 100000 columns]

3.1 Find nearest words

One of the many motivations that people are interested in words embedding is that it reveals similarities between words. Let's first check how this works with GloVe.

```
In [5]: from sklearn.metrics.pairwise import euclidean_distances, cosine_distances
```

```
def find_nearest(embedding, word=None, n=5, distance=euclidean_distances):
    """
    For given embedding matrix and a given word, find the n nearest words in the
    embedding space

    input:
        embedding: DataFrame, look at `glove`
        word: string, must be in the index of embedding dataframe
        n: int, number of nearest words
        distance: fucntion, it should at least support the euclidean_distances and
        cosine_distances

    return:
        A series with word as index, distance as value, sorted from lower to high
    """

    if word not in embedding:
        print('word not in pre-trained model')
```

```

        return
    targetvec = embedding[word]
    d = distance(embedding.T, [targetvec])
    d = {embedding.columns[index]:value for (index, value) in enumerate(list(d))}
    import heapq
    k_keys_sorted = heapq.nsmallest(n+1, d, key=d.get)
    return pd.Series({k:d[k][0] for k in k_keys_sorted[1:]})
In [6]: print("Using euclidean_distances, the closest words to frog are:")
        print(find_nearest(glove, 'lion'))
        print("Using cosine_distances, the closest words to frog are:")
        print(find_nearest(glove, 'lion', distance=cosine_distances))

```

Using euclidean_distances, the closest words to frog are:

```

dragon      4.210776
elephant    4.273111
wolf        4.667664
beast       4.737944
cat         4.739263

```

dtype: float64

Using cosine_distances, the closest words to frog are:

```

dragon      0.301670
elephant    0.329856
leopard     0.386800
bear        0.386803
cat         0.404449

```

dtype: float64

```

In [8]: print(find_nearest(glove, '8'))

        print(find_nearest(glove, 'google', distance=cosine_distances))

```

```

9      0.943478
7      0.943649
6      1.037347
5      1.111455
4      1.339804

```

dtype: float64

```

yahoo      0.136264
microsoft  0.189590
web        0.237019
aol        0.242831
facebook   0.248342

```

dtype: float64

What have you observed? Does the result make sense to you? Play with some other words, and see if you can find something interesting. Try countries and numebrs :).

3.2 Find nearest words with vector

Remember that at the beginning of the course we advertised the ability of word embedding being able to find relative relationship between words, such as king - male + female = queen. Let's test this with the embedding we have. But before that we need a method that's similar to `find_nearest`, but instead of taking a word, it takes an embedding vector as input.

```

In [9]: def find_nearest_with_vector(embedding, vector=None, n=5, distance=euclidean_distances):
        """
        For given embedding matrix and a given vector, find the n nearest words in the

```

```

embedding space

input:
    embedding: DataFrame, look at `glove`
    vector: Series, looks like a column vector of the embedding dataframe
    n: int, number of nearest words
    distance: function, it should at least support the euclidean_distances and
cosine_distances

return:
    A series with word as index, distance as value, sorted from lower to high
"""

d = distance(embedding.T, [vector])
d = {embedding.columns[index]:value for (index, value) in enumerate(list(d))}
import heapq
k_keys_sorted = heapq.nsmallest(n+1, d, key=d.get)
return pd.Series({k:d[k][0] for k in k_keys_sorted[1:]})

```

```
In [10]: find_nearest_with_vector(glove, glove['king']-glove['male']+glove['female'])
```

```
[10]: queen      4.340831
      prince     4.542057
      monarch    4.704783
      brother    4.717307
      george     4.840019
      dtype: float64
```

```
In [55]: print(find_nearest_with_vector(glove, glove['china']+glove['capital']))
          print(find_nearest_with_vector(glove, glove['beijing']-glove['china']+glove['italy']))
```

```

capital      6.866541
beijing      7.820086
chinese      8.027392
taiwan       8.451052
government   8.454450
dtype: float64
rome         4.265470
turin        4.500863
milan        4.876893
italian      4.959218
naples       5.059326
dtype: float64

```

What did you see? Can you explore some other interesting relations? Like countries vs cities, etc.

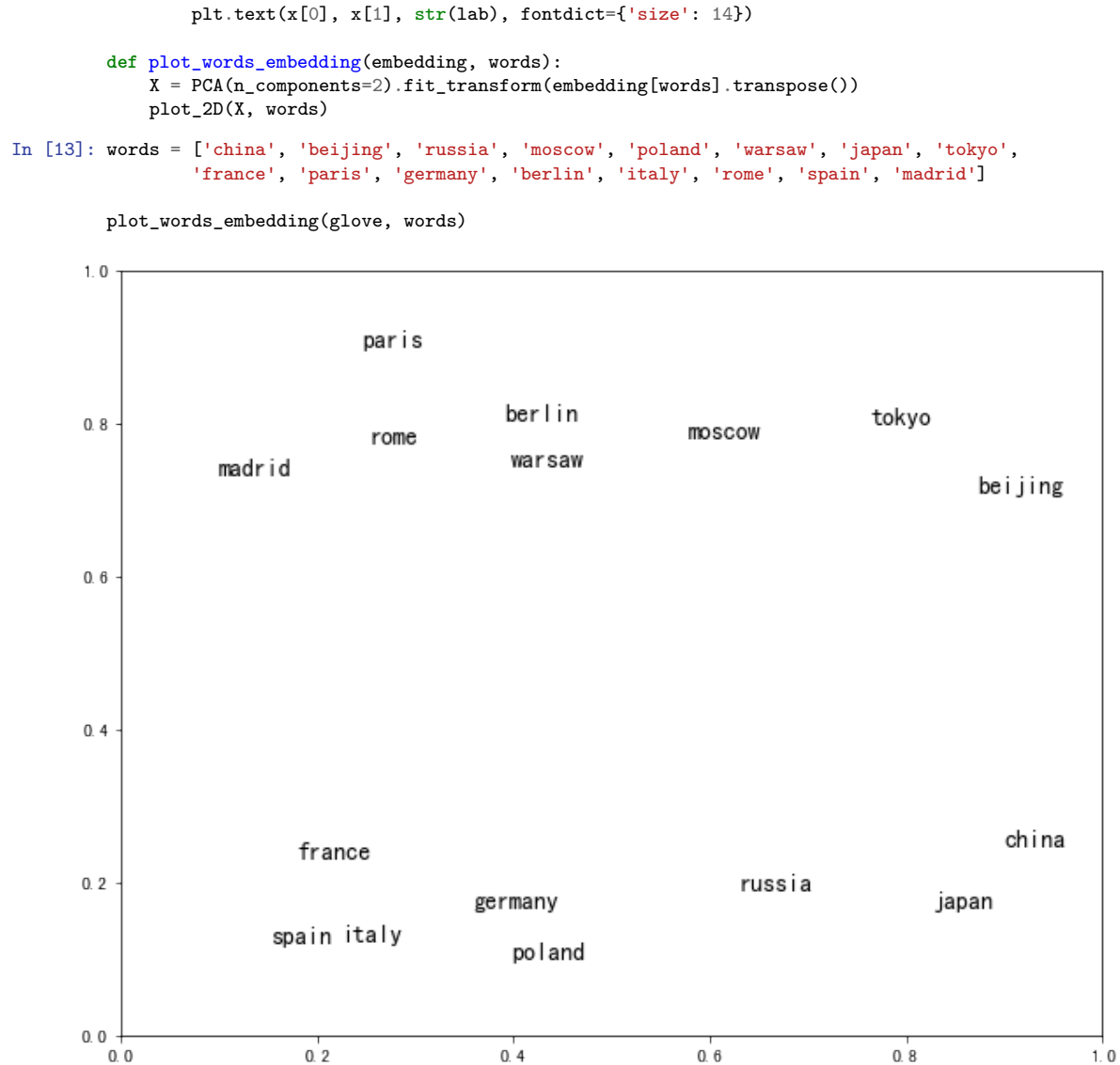
3.3 Word clustering

Another feature of the word embedding is that it can cluster similar word in to the same cluster while keep semantic relationship with other clusters. Try the following dimension reduction code:

```
In [12]: from sklearn.decomposition import PCA

def plot_2D(X, labels):
    x_min, x_max = np.min(X, 0), np.max(X, 0)
    X = 0.1 + 0.8 * (X - x_min) / (x_max - x_min)

    plt.figure(figsize=(10, 8))
    for x, lab in zip(X, labels):
```



Have you spot something interesting? Try with some other words set and see what you can find.

4 Skip-gram

4.1 Load the training data

```
In [14]: #from tools import load_data, show_model

text = load_data("plot_summaries_tokenized.txt")

print("Number of summaries: ", len(text))
print("Number of words:", len([w for s in text for w in s]))
print("Vocabulary size:", len({w for s in text for w in s}))
```

Number of summaries: 42306
Number of words: 13065221
Vocabulary size: 190786

There are about 200K unique words in this corpus. To make it more computational feasible, let's reduce the size of the vocabulary:

4.2 Encode the text

```
In [15]: MIN_COUNT = 20
def create_encoder(text, min_count=20):
    """
    - Create a encoder which is a dictionary like {word: index}
    - To reduce the total number of vocabularies, you can remove
      the words that appear for less than min_count times in the entire
      corpus
    - Enfore {'_unknown_': 0}

    input:
        text: list of token list, e.g. [['i', 'am', 'fine'], ['another', 'summary'],
    ...]
    returns:
        tokenmap: encoder dictionary
        tokenmap_reverse: reversed tokenmap {index: word} to faciliate inverse lookup
    """
    tokencount = {}
    tokenmap = {}
    tokenmap_reverse = {}
    for tokens in text:
        for token in tokens:
            tokencount[token] = tokencount.get(token, 0) + 1
    index = 0
    for tokens in text:
        for token in tokens:
            if tokencount[token] >= min_count:
                if token not in tokenmap:
                    tokenmap[token] = index
                    tokenmap_reverse[index] = token
                    index += 1
    return (tokenmap, tokenmap_reverse)
```

```
In [16]: tokenmap, tokenmap_reverse = create_encoder(text, MIN_COUNT)
VOCAB_SIZE = len(tokenmap)
print("the reduced vocabulary size is:", VOCAB_SIZE)
```

the reduced vocabulary size is: 26343

```
In [17]: # Encoder the text using the encoder you just created
def encode(text, tokenmap, default=0):
    return [[tokenmap.get(t, default) for t in s] for s in text]
```

```
In [18]: text_encoded = encode(text, tokenmap)
```

4.3 Construct training context pairs

To generate training data, we need to find word-context pairs from the encoded text, we also want to generate some negative sample, so the input and output may look like:

for input corpus: `[[2, 3, 1, 2]]`

returns: [[word, context, label]]

[[2, 3, 1], [2, 1, 1], [2, 2, 1], [3, 1, 1], ..., [4, 2, 0], [4, 3, 0], ...]

Notice that in practice the sequence should be shuffled.

```
In [19]: from keras.preprocessing.sequence import skipgrams

def training_data_generator(text_encoded, window_size=4, negative_samples=1.0,
                             batch_docs=50):
    """
    For given encoded text, return 3 np.array:
    words, contexts, labels
    Do not pair the w and its context cross different documents.

    input:
    text_encoded: list of list of int, each list of int is the numerical encoding of
    the doc
    window_size: int, define the context
    negative_samples: float, how much negative sampling you need, normally 1.0
    batch_docs: int, number of docs for which it generates one return

    return:
    words: list of int, the numerical encoding of the central words
    contexts: list of int, the numerical encoding of the context words
    labels: list of int, 1 or 0

    hint:
    1. You can use skipgrams method from keras
    2. For training purpose, words and contexts needs to be 2D array, with shape (N, 1),
       but labels is 1D array, with shape (N, )
    3. The output can be very big, you SHOULD using generator
    """
    for index, text in enumerate(text_encoded[::batch_docs]):
        labels = []
        words = []
        contexts = []
        for t in text_encoded[index:index+batch_docs]:
            sg = skipgrams(sequence=t, vocabulary_size=VOCAB_SIZE,
                           window_size=window_size, negative_samples=negative_samples, shuffle=True,
                           categorical=False, sampling_table=None, seed=None)
            labels.extend(sg[1])
            words.extend([w[0] for w in sg[0]])
            contexts.extend([w[1] for w in sg[0]])
        N = len(labels)
        yield np.array(words).reshape(N,1), np.array(contexts).reshape(N,1),
              np.array(labels)
```

4.4 Construct Learning Model

Now we need to create a network that looks like this:

```
In [20]: from keras.layers import Input, Activation, Reshape, dot, Embedding, Permute
         from keras.models import Model

         # Define two input layers

         input_words = Input(shape=(1,))
         input_contexts = Input(shape=(1,))

         # Embedding for the text
         embed = Embedding(VOCAB_SIZE, 100, input_length=1)

         embed1 = embed(input_words)
         embed1 = Reshape((100,))(embed1)
```



```

embed2 = embed(input_contexts)
embed2 = Reshape((100,))(embed2)

# Concatenate the convolutional features and the vector input
dot_product = dot([embed1, embed2], axes=1, normalize=False)
output = Activation('sigmoid')(dot_product)

# define a model with a list of two inputs
model = Model(inputs=[input_words, input_contexts], outputs=output)
print(model.summary())

```

WARNING: Logging before flag parsing goes to stderr.

W0318 16:06:57.453799 4315479488 deprecation_wrapper.py:119] From /usr/local/lib/python3.6/site-packages/keras/backend/tensorflow_backend.py:74: The name tf.get_default_graph is deprecated. Please use tf.compat.v1.get_default_graph instead.

W0318 16:06:57.489341 4315479488 deprecation_wrapper.py:119] From /usr/local/lib/python3.6/site-packages/keras/backend/tensorflow_backend.py:517: The name tf.placeholder is deprecated. Please use tf.compat.v1.placeholder instead.

W0318 16:06:57.513157 4315479488 deprecation_wrapper.py:119] From /usr/local/lib/python3.6/site-packages/keras/backend/tensorflow_backend.py:4138: The name tf.random_uniform is deprecated. Please use tf.random.uniform instead.

```

-----
Layer (type)                Output Shape          Param #   Connected to
-----
input_1 (InputLayer)        (None, 1)             0
-----
input_2 (InputLayer)        (None, 1)             0
-----
embedding_1 (Embedding)     (None, 1, 100)        2634300   input_1[0][0]
                                     input_2[0][0]
-----
reshape_1 (Reshape)         (None, 100)           0         embedding_1[0][0]
-----
reshape_2 (Reshape)         (None, 100)           0         embedding_1[1][0]
-----
dot_1 (Dot)                 (None, 1)             0         reshape_1[0][0]
                                     reshape_2[0][0]
-----
activation_1 (Activation)   (None, 1)             0         dot_1[0][0]
=====
Total params: 2,634,300
Trainable params: 2,634,300
Non-trainable params: 0
-----
-----

```

None

4.5 Train your model

The following is a simple version of training on batch code. You do not need to use opochs more than 10 since it will soon start shaking around the minimum. If you want to further improve your training, consider gradually increase the batch size or reduce the learning rate, then you can try for more than 10 epochs.

```
In [21]: import matplotlib.pyplot as plt
         model.compile(loss="binary_crossentropy", optimizer="rmsprop")

         epochs = 10
         ntot = 0

         for epoch in range(epochs):
             print("Epoch %d =====" % epoch)
             for words, contexts, labels in training_data_generator(text_encoded,
                 window_size=4, batch_docs=100):
                 loss = model.train_on_batch(x=[words, contexts], y=labels)
                 ntot += len(words)
             print("Total trained pairs (M): %10.2f ; \t loss: %.4f" % (ntot/1e6, loss))
```

```
W0318 16:07:15.124368 4315479488 deprecation_wrapper.py:119] From
/usr/local/lib/python3.6/site-packages/keras/optimizers.py:790: The name
tf.train.Optimizer is deprecated. Please use tf.compat.v1.train.Optimizer instead.
```

```
W0318 16:07:15.143607 4315479488 deprecation_wrapper.py:119] From
/usr/local/lib/python3.6/site-packages/keras/backend/tensorflow_backend.py:3376: The
name tf.log is deprecated. Please use tf.math.log instead.
```

```
W0318 16:07:15.151264 4315479488 deprecation.py:323] From
/usr/local/lib/python3.6/site-packages/tensorflow/python/ops/nn_impl.py:180:
add_dispatch_support.<locals>.wrapper (from tensorflow.python.ops.array_ops) is
deprecated and will be removed in a future version.
Instructions for updating:
Use tf.where in 2.0, which has the same broadcast rule as np.where
```

Epoch 0 =====

```
W0318 16:07:19.196613 4315479488 deprecation_wrapper.py:119] From
/usr/local/lib/python3.6/site-packages/keras/backend/tensorflow_backend.py:986: The
name tf.assign_add is deprecated. Please use tf.compat.v1.assign_add instead.
```

Total trained pairs (M):	0.52 ;	loss: 0.6930
Total trained pairs (M):	1.04 ;	loss: 0.6925
Total trained pairs (M):	1.56 ;	loss: 0.6919
Total trained pairs (M):	2.09 ;	loss: 0.6913
Total trained pairs (M):	2.60 ;	loss: 0.6905
Total trained pairs (M):	3.11 ;	loss: 0.6896
Total trained pairs (M):	3.62 ;	loss: 0.6885
Total trained pairs (M):	4.12 ;	loss: 0.6874
Total trained pairs (M):	4.62 ;	loss: 0.6861
Total trained pairs (M):	5.12 ;	loss: 0.6847
Total trained pairs (M):	5.62 ;	loss: 0.6832

Total trained pairs (M):	6.12 ;	loss: 0.6816
Total trained pairs (M):	6.62 ;	loss: 0.6798
Total trained pairs (M):	7.12 ;	loss: 0.6780
Total trained pairs (M):	7.62 ;	loss: 0.6760
Total trained pairs (M):	8.10 ;	loss: 0.6741
Total trained pairs (M):	8.58 ;	loss: 0.6720
Total trained pairs (M):	9.06 ;	loss: 0.6698
Total trained pairs (M):	9.55 ;	loss: 0.6675
Total trained pairs (M):	10.02 ;	loss: 0.6651
Total trained pairs (M):	10.50 ;	loss: 0.6627
Total trained pairs (M):	10.98 ;	loss: 0.6602
Total trained pairs (M):	11.46 ;	loss: 0.6577
Total trained pairs (M):	11.93 ;	loss: 0.6550
Total trained pairs (M):	12.41 ;	loss: 0.6524
Total trained pairs (M):	12.90 ;	loss: 0.6500
Total trained pairs (M):	13.38 ;	loss: 0.6473
Total trained pairs (M):	13.85 ;	loss: 0.6444
Total trained pairs (M):	14.32 ;	loss: 0.6417
Total trained pairs (M):	14.79 ;	loss: 0.6387
Total trained pairs (M):	15.26 ;	loss: 0.6360
Total trained pairs (M):	15.74 ;	loss: 0.6333
Total trained pairs (M):	16.21 ;	loss: 0.6301
Total trained pairs (M):	16.70 ;	loss: 0.6272
Total trained pairs (M):	17.19 ;	loss: 0.6244
Total trained pairs (M):	17.67 ;	loss: 0.6214
Total trained pairs (M):	18.15 ;	loss: 0.6181
Total trained pairs (M):	18.63 ;	loss: 0.6147
Total trained pairs (M):	19.10 ;	loss: 0.6114
Total trained pairs (M):	19.58 ;	loss: 0.6079
Total trained pairs (M):	20.06 ;	loss: 0.6051
Total trained pairs (M):	20.54 ;	loss: 0.6027
Total trained pairs (M):	21.01 ;	loss: 0.5996
Total trained pairs (M):	21.49 ;	loss: 0.5969
Total trained pairs (M):	21.98 ;	loss: 0.5937
Total trained pairs (M):	22.46 ;	loss: 0.5904
Total trained pairs (M):	22.95 ;	loss: 0.5867
Total trained pairs (M):	23.43 ;	loss: 0.5834
Total trained pairs (M):	23.91 ;	loss: 0.5798
Total trained pairs (M):	24.39 ;	loss: 0.5763
Total trained pairs (M):	24.87 ;	loss: 0.5740
Total trained pairs (M):	25.36 ;	loss: 0.5705
Total trained pairs (M):	25.85 ;	loss: 0.5671
Total trained pairs (M):	26.34 ;	loss: 0.5637
Total trained pairs (M):	26.83 ;	loss: 0.5598
Total trained pairs (M):	27.32 ;	loss: 0.5575
Total trained pairs (M):	27.84 ;	loss: 0.5564
Total trained pairs (M):	28.37 ;	loss: 0.5541
Total trained pairs (M):	28.89 ;	loss: 0.5512
Total trained pairs (M):	29.42 ;	loss: 0.5477
Total trained pairs (M):	29.93 ;	loss: 0.5450
Total trained pairs (M):	30.44 ;	loss: 0.5428
Total trained pairs (M):	30.95 ;	loss: 0.5389
Total trained pairs (M):	31.46 ;	loss: 0.5353
Total trained pairs (M):	31.95 ;	loss: 0.5328
Total trained pairs (M):	32.44 ;	loss: 0.5297
Total trained pairs (M):	32.92 ;	loss: 0.5261
Total trained pairs (M):	33.41 ;	loss: 0.5228
Total trained pairs (M):	33.90 ;	loss: 0.5199
Total trained pairs (M):	34.39 ;	loss: 0.5167

Total trained pairs (M):	34.88 ;	loss: 0.5134
Total trained pairs (M):	35.38 ;	loss: 0.5120
Total trained pairs (M):	35.87 ;	loss: 0.5088
Total trained pairs (M):	36.37 ;	loss: 0.5064
Total trained pairs (M):	36.86 ;	loss: 0.5029
Total trained pairs (M):	37.36 ;	loss: 0.5016
Total trained pairs (M):	37.86 ;	loss: 0.5009
Total trained pairs (M):	38.35 ;	loss: 0.4982
Total trained pairs (M):	38.84 ;	loss: 0.4963
Total trained pairs (M):	39.35 ;	loss: 0.4957
Total trained pairs (M):	39.86 ;	loss: 0.4925
Total trained pairs (M):	40.38 ;	loss: 0.4904
Total trained pairs (M):	40.90 ;	loss: 0.4892
Total trained pairs (M):	41.42 ;	loss: 0.4863
Total trained pairs (M):	41.94 ;	loss: 0.4833
Total trained pairs (M):	42.44 ;	loss: 0.4803
Total trained pairs (M):	42.98 ;	loss: 0.4811
Total trained pairs (M):	43.51 ;	loss: 0.4798
Total trained pairs (M):	44.05 ;	loss: 0.4773
Total trained pairs (M):	44.59 ;	loss: 0.4754
Total trained pairs (M):	45.13 ;	loss: 0.4730
Total trained pairs (M):	45.69 ;	loss: 0.4720
Total trained pairs (M):	46.24 ;	loss: 0.4696
Total trained pairs (M):	46.80 ;	loss: 0.4678
Total trained pairs (M):	47.35 ;	loss: 0.4657
Total trained pairs (M):	47.91 ;	loss: 0.4649
Total trained pairs (M):	48.47 ;	loss: 0.4630
Total trained pairs (M):	49.02 ;	loss: 0.4608
Total trained pairs (M):	49.58 ;	loss: 0.4584
Total trained pairs (M):	50.10 ;	loss: 0.4598
Total trained pairs (M):	50.61 ;	loss: 0.4574
Total trained pairs (M):	51.13 ;	loss: 0.4587
Total trained pairs (M):	51.64 ;	loss: 0.4572
Total trained pairs (M):	52.15 ;	loss: 0.4552
Total trained pairs (M):	52.67 ;	loss: 0.4529
Total trained pairs (M):	53.18 ;	loss: 0.4505
Total trained pairs (M):	53.69 ;	loss: 0.4490
Total trained pairs (M):	54.20 ;	loss: 0.4467
Total trained pairs (M):	54.71 ;	loss: 0.4460
Total trained pairs (M):	55.21 ;	loss: 0.4437
Total trained pairs (M):	55.73 ;	loss: 0.4438
Total trained pairs (M):	56.23 ;	loss: 0.4404
Total trained pairs (M):	56.74 ;	loss: 0.4385
Total trained pairs (M):	57.26 ;	loss: 0.4382
Total trained pairs (M):	57.77 ;	loss: 0.4367
Total trained pairs (M):	58.29 ;	loss: 0.4362
Total trained pairs (M):	58.81 ;	loss: 0.4359
Total trained pairs (M):	59.33 ;	loss: 0.4348
Total trained pairs (M):	59.85 ;	loss: 0.4332
Total trained pairs (M):	60.38 ;	loss: 0.4321
Total trained pairs (M):	60.91 ;	loss: 0.4299
Total trained pairs (M):	61.44 ;	loss: 0.4273
Total trained pairs (M):	61.97 ;	loss: 0.4242
Total trained pairs (M):	62.50 ;	loss: 0.4244
Total trained pairs (M):	63.03 ;	loss: 0.4225
Total trained pairs (M):	63.55 ;	loss: 0.4249
Total trained pairs (M):	64.08 ;	loss: 0.4226
Total trained pairs (M):	64.60 ;	loss: 0.4215
Total trained pairs (M):	65.12 ;	loss: 0.4191

Total trained pairs (M):	65.64 ;	loss: 0.4195
Total trained pairs (M):	66.17 ;	loss: 0.4194
Total trained pairs (M):	66.69 ;	loss: 0.4191
Total trained pairs (M):	67.21 ;	loss: 0.4178
Total trained pairs (M):	67.73 ;	loss: 0.4177
Total trained pairs (M):	68.24 ;	loss: 0.4157
Total trained pairs (M):	68.75 ;	loss: 0.4146
Total trained pairs (M):	69.26 ;	loss: 0.4129
Total trained pairs (M):	69.79 ;	loss: 0.4140
Total trained pairs (M):	70.31 ;	loss: 0.4110
Total trained pairs (M):	70.84 ;	loss: 0.4093
Total trained pairs (M):	71.37 ;	loss: 0.4116
Total trained pairs (M):	71.89 ;	loss: 0.4117
Total trained pairs (M):	72.43 ;	loss: 0.4162
Total trained pairs (M):	72.96 ;	loss: 0.4159
Total trained pairs (M):	73.49 ;	loss: 0.4164
Total trained pairs (M):	74.03 ;	loss: 0.4146
Total trained pairs (M):	74.56 ;	loss: 0.4126
Total trained pairs (M):	75.10 ;	loss: 0.4113
Total trained pairs (M):	75.63 ;	loss: 0.4100
Total trained pairs (M):	76.17 ;	loss: 0.4078
Total trained pairs (M):	76.70 ;	loss: 0.4087
Total trained pairs (M):	77.22 ;	loss: 0.4070
Total trained pairs (M):	77.75 ;	loss: 0.4071
Total trained pairs (M):	78.29 ;	loss: 0.4052
Total trained pairs (M):	78.82 ;	loss: 0.4033
Total trained pairs (M):	79.34 ;	loss: 0.4058
Total trained pairs (M):	79.84 ;	loss: 0.4087
Total trained pairs (M):	80.32 ;	loss: 0.4085
Total trained pairs (M):	80.81 ;	loss: 0.4072
Total trained pairs (M):	81.30 ;	loss: 0.4048
Total trained pairs (M):	81.79 ;	loss: 0.4042
Total trained pairs (M):	82.27 ;	loss: 0.4019
Total trained pairs (M):	82.77 ;	loss: 0.4058
Total trained pairs (M):	83.28 ;	loss: 0.4081
Total trained pairs (M):	83.79 ;	loss: 0.4088
Total trained pairs (M):	84.31 ;	loss: 0.4069
Total trained pairs (M):	84.83 ;	loss: 0.4074
Total trained pairs (M):	85.35 ;	loss: 0.4075
Total trained pairs (M):	85.86 ;	loss: 0.4065
Total trained pairs (M):	86.38 ;	loss: 0.4066
Total trained pairs (M):	86.89 ;	loss: 0.4035
Total trained pairs (M):	87.40 ;	loss: 0.4073
Total trained pairs (M):	87.91 ;	loss: 0.4053
Total trained pairs (M):	88.41 ;	loss: 0.4060
Total trained pairs (M):	88.91 ;	loss: 0.4041
Total trained pairs (M):	89.40 ;	loss: 0.4051
Total trained pairs (M):	89.88 ;	loss: 0.4047
Total trained pairs (M):	90.36 ;	loss: 0.4053
Total trained pairs (M):	90.84 ;	loss: 0.4031
Total trained pairs (M):	91.30 ;	loss: 0.4079
Total trained pairs (M):	91.76 ;	loss: 0.4065
Total trained pairs (M):	92.21 ;	loss: 0.4055
Total trained pairs (M):	92.66 ;	loss: 0.4079
Total trained pairs (M):	93.10 ;	loss: 0.4065
Total trained pairs (M):	93.54 ;	loss: 0.4074
Total trained pairs (M):	93.98 ;	loss: 0.4063
Total trained pairs (M):	94.41 ;	loss: 0.4090
Total trained pairs (M):	94.83 ;	loss: 0.4119

Total trained pairs (M):	95.26 ;	loss: 0.4107
Total trained pairs (M):	95.67 ;	loss: 0.4126
Total trained pairs (M):	96.10 ;	loss: 0.4191
Total trained pairs (M):	96.52 ;	loss: 0.4192
Total trained pairs (M):	96.94 ;	loss: 0.4225
Total trained pairs (M):	97.36 ;	loss: 0.4223
Total trained pairs (M):	97.78 ;	loss: 0.4213
Total trained pairs (M):	98.18 ;	loss: 0.4264
Total trained pairs (M):	98.59 ;	loss: 0.4271
Total trained pairs (M):	99.02 ;	loss: 0.4289
Total trained pairs (M):	99.46 ;	loss: 0.4360
Total trained pairs (M):	99.91 ;	loss: 0.4432
Total trained pairs (M):	100.37 ;	loss: 0.4421
Total trained pairs (M):	100.82 ;	loss: 0.4434
Total trained pairs (M):	101.27 ;	loss: 0.4406
Total trained pairs (M):	101.72 ;	loss: 0.4407
Total trained pairs (M):	102.16 ;	loss: 0.4397
Total trained pairs (M):	102.60 ;	loss: 0.4393
Total trained pairs (M):	103.05 ;	loss: 0.4371
Total trained pairs (M):	103.49 ;	loss: 0.4382
Total trained pairs (M):	103.94 ;	loss: 0.4385
Total trained pairs (M):	104.39 ;	loss: 0.4389
Total trained pairs (M):	104.84 ;	loss: 0.4412
Total trained pairs (M):	105.29 ;	loss: 0.4408
Total trained pairs (M):	105.74 ;	loss: 0.4409
Total trained pairs (M):	106.19 ;	loss: 0.4435
Total trained pairs (M):	106.64 ;	loss: 0.4414
Total trained pairs (M):	107.08 ;	loss: 0.4411
Total trained pairs (M):	107.52 ;	loss: 0.4415
Total trained pairs (M):	107.96 ;	loss: 0.4421
Total trained pairs (M):	108.40 ;	loss: 0.4446
Total trained pairs (M):	108.84 ;	loss: 0.4444
Total trained pairs (M):	109.28 ;	loss: 0.4438
Total trained pairs (M):	109.72 ;	loss: 0.4409
Total trained pairs (M):	110.16 ;	loss: 0.4399
Total trained pairs (M):	110.60 ;	loss: 0.4398
Total trained pairs (M):	111.04 ;	loss: 0.4448
Total trained pairs (M):	111.49 ;	loss: 0.4446
Total trained pairs (M):	111.93 ;	loss: 0.4454
Total trained pairs (M):	112.38 ;	loss: 0.4427
Total trained pairs (M):	112.82 ;	loss: 0.4420
Total trained pairs (M):	113.26 ;	loss: 0.4465
Total trained pairs (M):	113.71 ;	loss: 0.4467
Total trained pairs (M):	114.15 ;	loss: 0.4457
Total trained pairs (M):	114.61 ;	loss: 0.4462
Total trained pairs (M):	115.06 ;	loss: 0.4489
Total trained pairs (M):	115.51 ;	loss: 0.4484
Total trained pairs (M):	115.98 ;	loss: 0.4491
Total trained pairs (M):	116.45 ;	loss: 0.4531
Total trained pairs (M):	116.90 ;	loss: 0.4534
Total trained pairs (M):	117.36 ;	loss: 0.4519
Total trained pairs (M):	117.82 ;	loss: 0.4519
Total trained pairs (M):	118.27 ;	loss: 0.4536
Total trained pairs (M):	118.72 ;	loss: 0.4508
Total trained pairs (M):	119.16 ;	loss: 0.4575
Total trained pairs (M):	119.60 ;	loss: 0.4587
Total trained pairs (M):	120.03 ;	loss: 0.4590
Total trained pairs (M):	120.47 ;	loss: 0.4590
Total trained pairs (M):	120.90 ;	loss: 0.4585

Total trained pairs (M):	121.34 ;	loss: 0.4593
Total trained pairs (M):	121.78 ;	loss: 0.4571
Total trained pairs (M):	122.25 ;	loss: 0.4747
Total trained pairs (M):	122.73 ;	loss: 0.4721
Total trained pairs (M):	123.20 ;	loss: 0.4706
Total trained pairs (M):	123.67 ;	loss: 0.4721
Total trained pairs (M):	124.15 ;	loss: 0.4746
Total trained pairs (M):	124.63 ;	loss: 0.4712
Total trained pairs (M):	125.11 ;	loss: 0.4708
Total trained pairs (M):	125.58 ;	loss: 0.4705
Total trained pairs (M):	126.05 ;	loss: 0.4680
Total trained pairs (M):	126.53 ;	loss: 0.4683
Total trained pairs (M):	127.00 ;	loss: 0.4673
Total trained pairs (M):	127.48 ;	loss: 0.4659
Total trained pairs (M):	127.96 ;	loss: 0.4646
Total trained pairs (M):	128.43 ;	loss: 0.4663
Total trained pairs (M):	128.89 ;	loss: 0.4680
Total trained pairs (M):	129.34 ;	loss: 0.4669
Total trained pairs (M):	129.81 ;	loss: 0.4636
Total trained pairs (M):	130.27 ;	loss: 0.4677
Total trained pairs (M):	130.73 ;	loss: 0.4669
Total trained pairs (M):	131.20 ;	loss: 0.4662
Total trained pairs (M):	131.68 ;	loss: 0.4647
Total trained pairs (M):	132.16 ;	loss: 0.4651
Total trained pairs (M):	132.63 ;	loss: 0.4647
Total trained pairs (M):	133.13 ;	loss: 0.4655
Total trained pairs (M):	133.62 ;	loss: 0.4649
Total trained pairs (M):	134.13 ;	loss: 0.4646
Total trained pairs (M):	134.63 ;	loss: 0.4626
Total trained pairs (M):	135.14 ;	loss: 0.4653
Total trained pairs (M):	135.65 ;	loss: 0.4646
Total trained pairs (M):	136.17 ;	loss: 0.4644
Total trained pairs (M):	136.68 ;	loss: 0.4625
Total trained pairs (M):	137.19 ;	loss: 0.4624
Total trained pairs (M):	137.70 ;	loss: 0.4603
Total trained pairs (M):	138.21 ;	loss: 0.4584
Total trained pairs (M):	138.72 ;	loss: 0.4580
Total trained pairs (M):	139.24 ;	loss: 0.4557
Total trained pairs (M):	139.76 ;	loss: 0.4542
Total trained pairs (M):	140.28 ;	loss: 0.4536
Total trained pairs (M):	140.78 ;	loss: 0.4545
Total trained pairs (M):	141.29 ;	loss: 0.4530
Total trained pairs (M):	141.80 ;	loss: 0.4539
Total trained pairs (M):	142.30 ;	loss: 0.4552
Total trained pairs (M):	142.81 ;	loss: 0.4555
Total trained pairs (M):	143.30 ;	loss: 0.4535
Total trained pairs (M):	143.79 ;	loss: 0.4529
Total trained pairs (M):	144.29 ;	loss: 0.4518
Total trained pairs (M):	144.79 ;	loss: 0.4518
Total trained pairs (M):	145.26 ;	loss: 0.4569
Total trained pairs (M):	145.75 ;	loss: 0.4604
Total trained pairs (M):	146.22 ;	loss: 0.4621
Total trained pairs (M):	146.67 ;	loss: 0.4627
Total trained pairs (M):	147.11 ;	loss: 0.4617
Total trained pairs (M):	147.56 ;	loss: 0.4609
Total trained pairs (M):	148.01 ;	loss: 0.4590
Total trained pairs (M):	148.47 ;	loss: 0.4589
Total trained pairs (M):	148.92 ;	loss: 0.4585
Total trained pairs (M):	149.37 ;	loss: 0.4570

Total trained pairs (M):	149.84 ;	loss: 0.4572
Total trained pairs (M):	150.29 ;	loss: 0.4565
Total trained pairs (M):	150.76 ;	loss: 0.4571
Total trained pairs (M):	151.22 ;	loss: 0.4578
Total trained pairs (M):	151.69 ;	loss: 0.4563
Total trained pairs (M):	152.15 ;	loss: 0.4558
Total trained pairs (M):	152.61 ;	loss: 0.4559
Total trained pairs (M):	153.08 ;	loss: 0.4573
Total trained pairs (M):	153.55 ;	loss: 0.4591
Total trained pairs (M):	154.02 ;	loss: 0.4589
Total trained pairs (M):	154.50 ;	loss: 0.4578
Total trained pairs (M):	154.97 ;	loss: 0.4582
Total trained pairs (M):	155.44 ;	loss: 0.4560
Total trained pairs (M):	155.92 ;	loss: 0.4556
Total trained pairs (M):	156.39 ;	loss: 0.4558
Total trained pairs (M):	156.87 ;	loss: 0.4566
Total trained pairs (M):	157.35 ;	loss: 0.4534
Total trained pairs (M):	157.82 ;	loss: 0.4514
Total trained pairs (M):	158.30 ;	loss: 0.4552
Total trained pairs (M):	158.77 ;	loss: 0.4550
Total trained pairs (M):	159.25 ;	loss: 0.4527
Total trained pairs (M):	159.72 ;	loss: 0.4550
Total trained pairs (M):	160.19 ;	loss: 0.4526
Total trained pairs (M):	160.67 ;	loss: 0.4516
Total trained pairs (M):	161.15 ;	loss: 0.4516
Total trained pairs (M):	161.63 ;	loss: 0.4525
Total trained pairs (M):	162.10 ;	loss: 0.4529
Total trained pairs (M):	162.56 ;	loss: 0.4523
Total trained pairs (M):	163.03 ;	loss: 0.4517
Total trained pairs (M):	163.50 ;	loss: 0.4583
Total trained pairs (M):	163.97 ;	loss: 0.4589
Total trained pairs (M):	164.44 ;	loss: 0.4572
Total trained pairs (M):	164.91 ;	loss: 0.4555
Total trained pairs (M):	165.38 ;	loss: 0.4576
Total trained pairs (M):	165.85 ;	loss: 0.4579
Total trained pairs (M):	166.32 ;	loss: 0.4554
Total trained pairs (M):	166.79 ;	loss: 0.4555
Total trained pairs (M):	167.26 ;	loss: 0.4549
Total trained pairs (M):	167.73 ;	loss: 0.4548
Total trained pairs (M):	168.20 ;	loss: 0.4557
Total trained pairs (M):	168.68 ;	loss: 0.4548
Total trained pairs (M):	169.16 ;	loss: 0.4545
Total trained pairs (M):	169.64 ;	loss: 0.4538
Total trained pairs (M):	170.08 ;	loss: 0.4556
Total trained pairs (M):	170.54 ;	loss: 0.4562
Total trained pairs (M):	171.00 ;	loss: 0.4608
Total trained pairs (M):	171.46 ;	loss: 0.4588
Total trained pairs (M):	171.91 ;	loss: 0.4601
Total trained pairs (M):	172.36 ;	loss: 0.4579
Total trained pairs (M):	172.81 ;	loss: 0.4563
Total trained pairs (M):	173.27 ;	loss: 0.4531
Total trained pairs (M):	173.72 ;	loss: 0.4512
Total trained pairs (M):	174.18 ;	loss: 0.4496
Total trained pairs (M):	174.64 ;	loss: 0.4489
Total trained pairs (M):	175.09 ;	loss: 0.4488
Total trained pairs (M):	175.55 ;	loss: 0.4501
Total trained pairs (M):	176.01 ;	loss: 0.4504
Total trained pairs (M):	176.47 ;	loss: 0.4494
Total trained pairs (M):	176.93 ;	loss: 0.4482

Total trained pairs (M):	177.38 ;	loss: 0.4515
Total trained pairs (M):	177.82 ;	loss: 0.4514
Total trained pairs (M):	178.27 ;	loss: 0.4502
Total trained pairs (M):	178.72 ;	loss: 0.4521
Total trained pairs (M):	179.16 ;	loss: 0.4538
Total trained pairs (M):	179.59 ;	loss: 0.4532
Total trained pairs (M):	180.02 ;	loss: 0.4528
Total trained pairs (M):	180.45 ;	loss: 0.4548
Total trained pairs (M):	180.87 ;	loss: 0.4540
Total trained pairs (M):	181.27 ;	loss: 0.4562
Total trained pairs (M):	181.68 ;	loss: 0.4545
Total trained pairs (M):	182.09 ;	loss: 0.4536
Total trained pairs (M):	182.49 ;	loss: 0.4563
Total trained pairs (M):	182.90 ;	loss: 0.4533
Total trained pairs (M):	183.30 ;	loss: 0.4526
Total trained pairs (M):	183.71 ;	loss: 0.4502
Total trained pairs (M):	184.11 ;	loss: 0.4489
Total trained pairs (M):	184.52 ;	loss: 0.4454
Total trained pairs (M):	184.92 ;	loss: 0.4490
Total trained pairs (M):	185.33 ;	loss: 0.4496
Total trained pairs (M):	185.74 ;	loss: 0.4477
Total trained pairs (M):	186.15 ;	loss: 0.4464
Total trained pairs (M):	186.56 ;	loss: 0.4462
Total trained pairs (M):	186.97 ;	loss: 0.4450
Total trained pairs (M):	187.38 ;	loss: 0.4490
Total trained pairs (M):	187.79 ;	loss: 0.4488
Total trained pairs (M):	188.21 ;	loss: 0.4538
Total trained pairs (M):	188.63 ;	loss: 0.4530
Total trained pairs (M):	189.05 ;	loss: 0.4520
Total trained pairs (M):	189.46 ;	loss: 0.4498
Total trained pairs (M):	189.88 ;	loss: 0.4518
Total trained pairs (M):	190.32 ;	loss: 0.4535
Total trained pairs (M):	190.73 ;	loss: 0.4540
Total trained pairs (M):	191.16 ;	loss: 0.4526
Total trained pairs (M):	191.59 ;	loss: 0.4517
Total trained pairs (M):	192.01 ;	loss: 0.4506
Total trained pairs (M):	192.44 ;	loss: 0.4504
Total trained pairs (M):	192.89 ;	loss: 0.4499
Total trained pairs (M):	193.34 ;	loss: 0.4531
Total trained pairs (M):	193.79 ;	loss: 0.4513
Total trained pairs (M):	194.24 ;	loss: 0.4490
Total trained pairs (M):	194.68 ;	loss: 0.4512
Total trained pairs (M):	195.11 ;	loss: 0.4502
Total trained pairs (M):	195.56 ;	loss: 0.4572
Total trained pairs (M):	196.01 ;	loss: 0.4614
Total trained pairs (M):	196.46 ;	loss: 0.4598
Total trained pairs (M):	196.91 ;	loss: 0.4584
Total trained pairs (M):	197.35 ;	loss: 0.4585
Total trained pairs (M):	197.79 ;	loss: 0.4576
Total trained pairs (M):	198.22 ;	loss: 0.4589
Total trained pairs (M):	198.65 ;	loss: 0.4589
Total trained pairs (M):	199.08 ;	loss: 0.4586
Total trained pairs (M):	199.50 ;	loss: 0.4587
Total trained pairs (M):	199.93 ;	loss: 0.4585
Total trained pairs (M):	200.36 ;	loss: 0.4580
Total trained pairs (M):	200.80 ;	loss: 0.4633
Total trained pairs (M):	201.24 ;	loss: 0.4637
Total trained pairs (M):	201.69 ;	loss: 0.4633
Total trained pairs (M):	202.14 ;	loss: 0.4622

Epoch 1 =====

Total trained pairs (M):	202.66 ;	loss: 0.5665
Total trained pairs (M):	203.18 ;	loss: 0.5592
Total trained pairs (M):	203.71 ;	loss: 0.5503
Total trained pairs (M):	204.23 ;	loss: 0.5425
Total trained pairs (M):	204.74 ;	loss: 0.5386
Total trained pairs (M):	205.25 ;	loss: 0.5337
Total trained pairs (M):	205.76 ;	loss: 0.5301
Total trained pairs (M):	206.27 ;	loss: 0.5277
Total trained pairs (M):	206.77 ;	loss: 0.5218
Total trained pairs (M):	207.27 ;	loss: 0.5174
Total trained pairs (M):	207.77 ;	loss: 0.5155
Total trained pairs (M):	208.26 ;	loss: 0.5106
Total trained pairs (M):	208.76 ;	loss: 0.5080
Total trained pairs (M):	209.27 ;	loss: 0.5058
Total trained pairs (M):	209.76 ;	loss: 0.5017
Total trained pairs (M):	210.24 ;	loss: 0.5016
Total trained pairs (M):	210.72 ;	loss: 0.4990
Total trained pairs (M):	211.20 ;	loss: 0.4964
Total trained pairs (M):	211.69 ;	loss: 0.4952
Total trained pairs (M):	212.17 ;	loss: 0.4923
Total trained pairs (M):	212.64 ;	loss: 0.4879
Total trained pairs (M):	213.12 ;	loss: 0.4871
Total trained pairs (M):	213.60 ;	loss: 0.4835
Total trained pairs (M):	214.07 ;	loss: 0.4827
Total trained pairs (M):	214.55 ;	loss: 0.4795
Total trained pairs (M):	215.04 ;	loss: 0.4757
Total trained pairs (M):	215.52 ;	loss: 0.4742
Total trained pairs (M):	215.99 ;	loss: 0.4663
Total trained pairs (M):	216.46 ;	loss: 0.4646
Total trained pairs (M):	216.93 ;	loss: 0.4641
Total trained pairs (M):	217.40 ;	loss: 0.4612
Total trained pairs (M):	217.88 ;	loss: 0.4617
Total trained pairs (M):	218.35 ;	loss: 0.4591
Total trained pairs (M):	218.84 ;	loss: 0.4595
Total trained pairs (M):	219.33 ;	loss: 0.4567
Total trained pairs (M):	219.82 ;	loss: 0.4566
Total trained pairs (M):	220.29 ;	loss: 0.4548
Total trained pairs (M):	220.77 ;	loss: 0.4532
Total trained pairs (M):	221.24 ;	loss: 0.4517
Total trained pairs (M):	221.72 ;	loss: 0.4490
Total trained pairs (M):	222.20 ;	loss: 0.4466
Total trained pairs (M):	222.68 ;	loss: 0.4402
Total trained pairs (M):	223.16 ;	loss: 0.4395
Total trained pairs (M):	223.64 ;	loss: 0.4371
Total trained pairs (M):	224.12 ;	loss: 0.4356
Total trained pairs (M):	224.61 ;	loss: 0.4351
Total trained pairs (M):	225.09 ;	loss: 0.4332
Total trained pairs (M):	225.57 ;	loss: 0.4325
Total trained pairs (M):	226.05 ;	loss: 0.4309
Total trained pairs (M):	226.53 ;	loss: 0.4278
Total trained pairs (M):	227.02 ;	loss: 0.4282
Total trained pairs (M):	227.50 ;	loss: 0.4275
Total trained pairs (M):	227.99 ;	loss: 0.4247
Total trained pairs (M):	228.48 ;	loss: 0.4246
Total trained pairs (M):	228.97 ;	loss: 0.4204
Total trained pairs (M):	229.46 ;	loss: 0.4202
Total trained pairs (M):	229.98 ;	loss: 0.4226
Total trained pairs (M):	230.51 ;	loss: 0.4242

Total trained pairs (M):	231.04 ;	loss: 0.4237
Total trained pairs (M):	231.56 ;	loss: 0.4223
Total trained pairs (M):	232.07 ;	loss: 0.4218
Total trained pairs (M):	232.58 ;	loss: 0.4237
Total trained pairs (M):	233.09 ;	loss: 0.4198
Total trained pairs (M):	233.60 ;	loss: 0.4185
Total trained pairs (M):	234.10 ;	loss: 0.4155
Total trained pairs (M):	234.58 ;	loss: 0.4144
Total trained pairs (M):	235.07 ;	loss: 0.4115
Total trained pairs (M):	235.55 ;	loss: 0.4112
Total trained pairs (M):	236.04 ;	loss: 0.4102
Total trained pairs (M):	236.53 ;	loss: 0.4106
Total trained pairs (M):	237.02 ;	loss: 0.4085
Total trained pairs (M):	237.52 ;	loss: 0.4120
Total trained pairs (M):	238.01 ;	loss: 0.4113
Total trained pairs (M):	238.51 ;	loss: 0.4098
Total trained pairs (M):	239.00 ;	loss: 0.4089
Total trained pairs (M):	239.50 ;	loss: 0.4104
Total trained pairs (M):	240.00 ;	loss: 0.4115
Total trained pairs (M):	240.49 ;	loss: 0.4113
Total trained pairs (M):	240.99 ;	loss: 0.4136
Total trained pairs (M):	241.49 ;	loss: 0.4155
Total trained pairs (M):	242.00 ;	loss: 0.4148
Total trained pairs (M):	242.52 ;	loss: 0.4139
Total trained pairs (M):	243.04 ;	loss: 0.4152
Total trained pairs (M):	243.56 ;	loss: 0.4132
Total trained pairs (M):	244.08 ;	loss: 0.4136
Total trained pairs (M):	244.59 ;	loss: 0.4120
Total trained pairs (M):	245.12 ;	loss: 0.4183
Total trained pairs (M):	245.66 ;	loss: 0.4197
Total trained pairs (M):	246.19 ;	loss: 0.4187
Total trained pairs (M):	246.73 ;	loss: 0.4170
Total trained pairs (M):	247.28 ;	loss: 0.4157
Total trained pairs (M):	247.83 ;	loss: 0.4176
Total trained pairs (M):	248.38 ;	loss: 0.4169
Total trained pairs (M):	248.94 ;	loss: 0.4162
Total trained pairs (M):	249.49 ;	loss: 0.4167
Total trained pairs (M):	250.05 ;	loss: 0.4162
Total trained pairs (M):	250.61 ;	loss: 0.4166
Total trained pairs (M):	251.17 ;	loss: 0.4145
Total trained pairs (M):	251.72 ;	loss: 0.4148
Total trained pairs (M):	252.24 ;	loss: 0.4191
Total trained pairs (M):	252.75 ;	loss: 0.4171
Total trained pairs (M):	253.27 ;	loss: 0.4208
Total trained pairs (M):	253.79 ;	loss: 0.4214
Total trained pairs (M):	254.30 ;	loss: 0.4209
Total trained pairs (M):	254.81 ;	loss: 0.4194
Total trained pairs (M):	255.33 ;	loss: 0.4190
Total trained pairs (M):	255.83 ;	loss: 0.4206
Total trained pairs (M):	256.34 ;	loss: 0.4192
Total trained pairs (M):	256.85 ;	loss: 0.4189
Total trained pairs (M):	257.36 ;	loss: 0.4196
Total trained pairs (M):	257.87 ;	loss: 0.4213
Total trained pairs (M):	258.38 ;	loss: 0.4199
Total trained pairs (M):	258.88 ;	loss: 0.4185
Total trained pairs (M):	259.40 ;	loss: 0.4219
Total trained pairs (M):	259.91 ;	loss: 0.4198
Total trained pairs (M):	260.43 ;	loss: 0.4215
Total trained pairs (M):	260.95 ;	loss: 0.4226

Total trained pairs (M):	261.47 ;	loss: 0.4220
Total trained pairs (M):	261.99 ;	loss: 0.4219
Total trained pairs (M):	262.53 ;	loss: 0.4227
Total trained pairs (M):	263.05 ;	loss: 0.4221
Total trained pairs (M):	263.58 ;	loss: 0.4201
Total trained pairs (M):	264.11 ;	loss: 0.4182
Total trained pairs (M):	264.64 ;	loss: 0.4194
Total trained pairs (M):	265.17 ;	loss: 0.4180
Total trained pairs (M):	265.70 ;	loss: 0.4229
Total trained pairs (M):	266.22 ;	loss: 0.4213
Total trained pairs (M):	266.74 ;	loss: 0.4204
Total trained pairs (M):	267.26 ;	loss: 0.4189
Total trained pairs (M):	267.79 ;	loss: 0.4215
Total trained pairs (M):	268.31 ;	loss: 0.4211
Total trained pairs (M):	268.83 ;	loss: 0.4210
Total trained pairs (M):	269.35 ;	loss: 0.4210
Total trained pairs (M):	269.87 ;	loss: 0.4204
Total trained pairs (M):	270.38 ;	loss: 0.4216
Total trained pairs (M):	270.89 ;	loss: 0.4197
Total trained pairs (M):	271.40 ;	loss: 0.4194
Total trained pairs (M):	271.93 ;	loss: 0.4212
Total trained pairs (M):	272.45 ;	loss: 0.4190
Total trained pairs (M):	272.98 ;	loss: 0.4173
Total trained pairs (M):	273.51 ;	loss: 0.4217
Total trained pairs (M):	274.03 ;	loss: 0.4206
Total trained pairs (M):	274.57 ;	loss: 0.4258
Total trained pairs (M):	275.10 ;	loss: 0.4264
Total trained pairs (M):	275.63 ;	loss: 0.4285
Total trained pairs (M):	276.17 ;	loss: 0.4261
Total trained pairs (M):	276.70 ;	loss: 0.4258
Total trained pairs (M):	277.24 ;	loss: 0.4246
Total trained pairs (M):	277.78 ;	loss: 0.4219
Total trained pairs (M):	278.31 ;	loss: 0.4206
Total trained pairs (M):	278.84 ;	loss: 0.4229
Total trained pairs (M):	279.36 ;	loss: 0.4218
Total trained pairs (M):	279.90 ;	loss: 0.4209
Total trained pairs (M):	280.43 ;	loss: 0.4202
Total trained pairs (M):	280.96 ;	loss: 0.4197
Total trained pairs (M):	281.48 ;	loss: 0.4214
Total trained pairs (M):	281.98 ;	loss: 0.4251
Total trained pairs (M):	282.47 ;	loss: 0.4246
Total trained pairs (M):	282.95 ;	loss: 0.4232
Total trained pairs (M):	283.45 ;	loss: 0.4221
Total trained pairs (M):	283.93 ;	loss: 0.4216
Total trained pairs (M):	284.42 ;	loss: 0.4201
Total trained pairs (M):	284.91 ;	loss: 0.4201
Total trained pairs (M):	285.42 ;	loss: 0.4223
Total trained pairs (M):	285.94 ;	loss: 0.4218
Total trained pairs (M):	286.45 ;	loss: 0.4194
Total trained pairs (M):	286.97 ;	loss: 0.4216
Total trained pairs (M):	287.49 ;	loss: 0.4211
Total trained pairs (M):	288.01 ;	loss: 0.4192
Total trained pairs (M):	288.52 ;	loss: 0.4193
Total trained pairs (M):	289.04 ;	loss: 0.4179
Total trained pairs (M):	289.54 ;	loss: 0.4217
Total trained pairs (M):	290.05 ;	loss: 0.4192
Total trained pairs (M):	290.55 ;	loss: 0.4188
Total trained pairs (M):	291.06 ;	loss: 0.4170
Total trained pairs (M):	291.55 ;	loss: 0.4176

Total trained pairs (M):	292.03 ;	loss: 0.4187
Total trained pairs (M):	292.51 ;	loss: 0.4178
Total trained pairs (M):	292.98 ;	loss: 0.4171
Total trained pairs (M):	293.44 ;	loss: 0.4208
Total trained pairs (M):	293.90 ;	loss: 0.4194
Total trained pairs (M):	294.36 ;	loss: 0.4177
Total trained pairs (M):	294.80 ;	loss: 0.4190
Total trained pairs (M):	295.24 ;	loss: 0.4194
Total trained pairs (M):	295.68 ;	loss: 0.4192
Total trained pairs (M):	296.13 ;	loss: 0.4183
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Total trained pairs (M):	296.97 ;	loss: 0.4228
Total trained pairs (M):	297.40 ;	loss: 0.4198
Total trained pairs (M):	297.82 ;	loss: 0.4203
Total trained pairs (M):	298.25 ;	loss: 0.4268
Total trained pairs (M):	298.66 ;	loss: 0.4273
Total trained pairs (M):	299.09 ;	loss: 0.4297
Total trained pairs (M):	299.50 ;	loss: 0.4306
Total trained pairs (M):	299.92 ;	loss: 0.4304
Total trained pairs (M):	300.32 ;	loss: 0.4336
Total trained pairs (M):	300.74 ;	loss: 0.4347
Total trained pairs (M):	301.16 ;	loss: 0.4351
Total trained pairs (M):	301.60 ;	loss: 0.4424
Total trained pairs (M):	302.06 ;	loss: 0.4478
Total trained pairs (M):	302.52 ;	loss: 0.4499
Total trained pairs (M):	302.96 ;	loss: 0.4482
Total trained pairs (M):	303.41 ;	loss: 0.4465
Total trained pairs (M):	303.86 ;	loss: 0.4458
Total trained pairs (M):	304.30 ;	loss: 0.4446
Total trained pairs (M):	304.75 ;	loss: 0.4450
Total trained pairs (M):	305.19 ;	loss: 0.4436
Total trained pairs (M):	305.64 ;	loss: 0.4435
Total trained pairs (M):	306.08 ;	loss: 0.4416
Total trained pairs (M):	306.53 ;	loss: 0.4429
Total trained pairs (M):	306.98 ;	loss: 0.4430
Total trained pairs (M):	307.43 ;	loss: 0.4423
Total trained pairs (M):	307.88 ;	loss: 0.4412
Total trained pairs (M):	308.33 ;	loss: 0.4436
Total trained pairs (M):	308.78 ;	loss: 0.4425
Total trained pairs (M):	309.22 ;	loss: 0.4422
Total trained pairs (M):	309.66 ;	loss: 0.4428
Total trained pairs (M):	310.10 ;	loss: 0.4412
Total trained pairs (M):	310.54 ;	loss: 0.4433
Total trained pairs (M):	310.98 ;	loss: 0.4447
Total trained pairs (M):	311.42 ;	loss: 0.4422
Total trained pairs (M):	311.86 ;	loss: 0.4393
Total trained pairs (M):	312.30 ;	loss: 0.4396
Total trained pairs (M):	312.74 ;	loss: 0.4381
Total trained pairs (M):	313.18 ;	loss: 0.4419
Total trained pairs (M):	313.63 ;	loss: 0.4403
Total trained pairs (M):	314.07 ;	loss: 0.4415
Total trained pairs (M):	314.52 ;	loss: 0.4403
Total trained pairs (M):	314.96 ;	loss: 0.4387
Total trained pairs (M):	315.41 ;	loss: 0.4432
Total trained pairs (M):	315.85 ;	loss: 0.4425
Total trained pairs (M):	316.29 ;	loss: 0.4405
Total trained pairs (M):	316.75 ;	loss: 0.4414
Total trained pairs (M):	317.20 ;	loss: 0.4443
Total trained pairs (M):	317.66 ;	loss: 0.4435

Total trained pairs (M):	318.12 ;	loss: 0.4440
Total trained pairs (M):	318.59 ;	loss: 0.4464
Total trained pairs (M):	319.04 ;	loss: 0.4478
Total trained pairs (M):	319.50 ;	loss: 0.4459
Total trained pairs (M):	319.96 ;	loss: 0.4443
Total trained pairs (M):	320.41 ;	loss: 0.4455
Total trained pairs (M):	320.86 ;	loss: 0.4434
Total trained pairs (M):	321.30 ;	loss: 0.4482
Total trained pairs (M):	321.74 ;	loss: 0.4502
Total trained pairs (M):	322.17 ;	loss: 0.4494
Total trained pairs (M):	322.61 ;	loss: 0.4486
Total trained pairs (M):	323.04 ;	loss: 0.4478
Total trained pairs (M):	323.48 ;	loss: 0.4486
Total trained pairs (M):	323.92 ;	loss: 0.4479
Total trained pairs (M):	324.40 ;	loss: 0.4616
Total trained pairs (M):	324.87 ;	loss: 0.4601
Total trained pairs (M):	325.34 ;	loss: 0.4577
Total trained pairs (M):	325.81 ;	loss: 0.4593
Total trained pairs (M):	326.29 ;	loss: 0.4604
Total trained pairs (M):	326.77 ;	loss: 0.4580
Total trained pairs (M):	327.25 ;	loss: 0.4572
Total trained pairs (M):	327.72 ;	loss: 0.4571
Total trained pairs (M):	328.19 ;	loss: 0.4560
Total trained pairs (M):	328.67 ;	loss: 0.4560
Total trained pairs (M):	329.14 ;	loss: 0.4532
Total trained pairs (M):	329.62 ;	loss: 0.4526
Total trained pairs (M):	330.10 ;	loss: 0.4514
Total trained pairs (M):	330.57 ;	loss: 0.4545
Total trained pairs (M):	331.03 ;	loss: 0.4560
Total trained pairs (M):	331.48 ;	loss: 0.4530
Total trained pairs (M):	331.95 ;	loss: 0.4496
Total trained pairs (M):	332.41 ;	loss: 0.4521
Total trained pairs (M):	332.88 ;	loss: 0.4533
Total trained pairs (M):	333.35 ;	loss: 0.4524
Total trained pairs (M):	333.82 ;	loss: 0.4512
Total trained pairs (M):	334.30 ;	loss: 0.4512
Total trained pairs (M):	334.78 ;	loss: 0.4511
Total trained pairs (M):	335.27 ;	loss: 0.4495
Total trained pairs (M):	335.76 ;	loss: 0.4493
Total trained pairs (M):	336.27 ;	loss: 0.4497
Total trained pairs (M):	336.77 ;	loss: 0.4480
Total trained pairs (M):	337.28 ;	loss: 0.4492
Total trained pairs (M):	337.80 ;	loss: 0.4482
Total trained pairs (M):	338.31 ;	loss: 0.4480
Total trained pairs (M):	338.82 ;	loss: 0.4465
Total trained pairs (M):	339.33 ;	loss: 0.4465
Total trained pairs (M):	339.84 ;	loss: 0.4442
Total trained pairs (M):	340.35 ;	loss: 0.4429
Total trained pairs (M):	340.87 ;	loss: 0.4428
Total trained pairs (M):	341.38 ;	loss: 0.4392
Total trained pairs (M):	341.90 ;	loss: 0.4374
Total trained pairs (M):	342.42 ;	loss: 0.4374
Total trained pairs (M):	342.92 ;	loss: 0.4378
Total trained pairs (M):	343.43 ;	loss: 0.4369
Total trained pairs (M):	343.95 ;	loss: 0.4374
Total trained pairs (M):	344.45 ;	loss: 0.4389
Total trained pairs (M):	344.95 ;	loss: 0.4372
Total trained pairs (M):	345.44 ;	loss: 0.4366
Total trained pairs (M):	345.94 ;	loss: 0.4354

Total trained pairs (M):	346.43 ;	loss: 0.4359
Total trained pairs (M):	346.93 ;	loss: 0.4332
Total trained pairs (M):	347.41 ;	loss: 0.4395
Total trained pairs (M):	347.89 ;	loss: 0.4421
Total trained pairs (M):	348.36 ;	loss: 0.4431
Total trained pairs (M):	348.81 ;	loss: 0.4428
Total trained pairs (M):	349.26 ;	loss: 0.4428
Total trained pairs (M):	349.70 ;	loss: 0.4404
Total trained pairs (M):	350.15 ;	loss: 0.4391
Total trained pairs (M):	350.61 ;	loss: 0.4388
Total trained pairs (M):	351.06 ;	loss: 0.4385
Total trained pairs (M):	351.51 ;	loss: 0.4368
Total trained pairs (M):	351.98 ;	loss: 0.4377
Total trained pairs (M):	352.44 ;	loss: 0.4377
Total trained pairs (M):	352.90 ;	loss: 0.4365
Total trained pairs (M):	353.37 ;	loss: 0.4369
Total trained pairs (M):	353.83 ;	loss: 0.4368
Total trained pairs (M):	354.29 ;	loss: 0.4352
Total trained pairs (M):	354.76 ;	loss: 0.4368
Total trained pairs (M):	355.22 ;	loss: 0.4351
Total trained pairs (M):	355.69 ;	loss: 0.4386
Total trained pairs (M):	356.16 ;	loss: 0.4370
Total trained pairs (M):	356.64 ;	loss: 0.4365
Total trained pairs (M):	357.12 ;	loss: 0.4364
Total trained pairs (M):	357.59 ;	loss: 0.4353
Total trained pairs (M):	358.06 ;	loss: 0.4346
Total trained pairs (M):	358.53 ;	loss: 0.4349
Total trained pairs (M):	359.01 ;	loss: 0.4344
Total trained pairs (M):	359.49 ;	loss: 0.4331
Total trained pairs (M):	359.97 ;	loss: 0.4305
Total trained pairs (M):	360.44 ;	loss: 0.4347
Total trained pairs (M):	360.92 ;	loss: 0.4337
Total trained pairs (M):	361.39 ;	loss: 0.4317
Total trained pairs (M):	361.86 ;	loss: 0.4337
Total trained pairs (M):	362.33 ;	loss: 0.4306
Total trained pairs (M):	362.81 ;	loss: 0.4296
Total trained pairs (M):	363.29 ;	loss: 0.4295
Total trained pairs (M):	363.77 ;	loss: 0.4309
Total trained pairs (M):	364.24 ;	loss: 0.4306
Total trained pairs (M):	364.71 ;	loss: 0.4302
Total trained pairs (M):	365.17 ;	loss: 0.4299
Total trained pairs (M):	365.64 ;	loss: 0.4352
Total trained pairs (M):	366.11 ;	loss: 0.4365
Total trained pairs (M):	366.58 ;	loss: 0.4335
Total trained pairs (M):	367.05 ;	loss: 0.4334
Total trained pairs (M):	367.52 ;	loss: 0.4343
Total trained pairs (M):	367.99 ;	loss: 0.4356
Total trained pairs (M):	368.46 ;	loss: 0.4330
Total trained pairs (M):	368.93 ;	loss: 0.4339
Total trained pairs (M):	369.40 ;	loss: 0.4331
Total trained pairs (M):	369.87 ;	loss: 0.4332
Total trained pairs (M):	370.34 ;	loss: 0.4348
Total trained pairs (M):	370.82 ;	loss: 0.4328
Total trained pairs (M):	371.30 ;	loss: 0.4333
Total trained pairs (M):	371.78 ;	loss: 0.4323
Total trained pairs (M):	372.23 ;	loss: 0.4334
Total trained pairs (M):	372.68 ;	loss: 0.4357
Total trained pairs (M):	373.14 ;	loss: 0.4400
Total trained pairs (M):	373.60 ;	loss: 0.4384

Total trained pairs (M):	374.05 ;	loss: 0.4388
Total trained pairs (M):	374.50 ;	loss: 0.4356
Total trained pairs (M):	374.95 ;	loss: 0.4343
Total trained pairs (M):	375.41 ;	loss: 0.4328
Total trained pairs (M):	375.87 ;	loss: 0.4312
Total trained pairs (M):	376.33 ;	loss: 0.4289
Total trained pairs (M):	376.78 ;	loss: 0.4299
Total trained pairs (M):	377.23 ;	loss: 0.4295
Total trained pairs (M):	377.69 ;	loss: 0.4313
Total trained pairs (M):	378.15 ;	loss: 0.4303
Total trained pairs (M):	378.61 ;	loss: 0.4295
Total trained pairs (M):	379.07 ;	loss: 0.4281
Total trained pairs (M):	379.52 ;	loss: 0.4317
Total trained pairs (M):	379.97 ;	loss: 0.4336
Total trained pairs (M):	380.41 ;	loss: 0.4304
Total trained pairs (M):	380.86 ;	loss: 0.4342
Total trained pairs (M):	381.30 ;	loss: 0.4352
Total trained pairs (M):	381.74 ;	loss: 0.4342
Total trained pairs (M):	382.17 ;	loss: 0.4343
Total trained pairs (M):	382.59 ;	loss: 0.4363
Total trained pairs (M):	383.01 ;	loss: 0.4368
Total trained pairs (M):	383.42 ;	loss: 0.4371
Total trained pairs (M):	383.83 ;	loss: 0.4368
Total trained pairs (M):	384.23 ;	loss: 0.4354
Total trained pairs (M):	384.63 ;	loss: 0.4385
Total trained pairs (M):	385.04 ;	loss: 0.4370
Total trained pairs (M):	385.45 ;	loss: 0.4353
Total trained pairs (M):	385.85 ;	loss: 0.4328
Total trained pairs (M):	386.25 ;	loss: 0.4317
Total trained pairs (M):	386.66 ;	loss: 0.4285
Total trained pairs (M):	387.06 ;	loss: 0.4326
Total trained pairs (M):	387.47 ;	loss: 0.4328
Total trained pairs (M):	387.88 ;	loss: 0.4326
Total trained pairs (M):	388.29 ;	loss: 0.4295
Total trained pairs (M):	388.70 ;	loss: 0.4296
Total trained pairs (M):	389.11 ;	loss: 0.4283
Total trained pairs (M):	389.52 ;	loss: 0.4334
Total trained pairs (M):	389.93 ;	loss: 0.4330
Total trained pairs (M):	390.35 ;	loss: 0.4390
Total trained pairs (M):	390.77 ;	loss: 0.4383
Total trained pairs (M):	391.19 ;	loss: 0.4368
Total trained pairs (M):	391.60 ;	loss: 0.4364
Total trained pairs (M):	392.03 ;	loss: 0.4379
Total trained pairs (M):	392.46 ;	loss: 0.4411
Total trained pairs (M):	392.88 ;	loss: 0.4425
Total trained pairs (M):	393.30 ;	loss: 0.4409
Total trained pairs (M):	393.73 ;	loss: 0.4385
Total trained pairs (M):	394.15 ;	loss: 0.4380
Total trained pairs (M):	394.58 ;	loss: 0.4387
Total trained pairs (M):	395.03 ;	loss: 0.4388
Total trained pairs (M):	395.48 ;	loss: 0.4423
Total trained pairs (M):	395.93 ;	loss: 0.4395
Total trained pairs (M):	396.38 ;	loss: 0.4382
Total trained pairs (M):	396.82 ;	loss: 0.4398
Total trained pairs (M):	397.26 ;	loss: 0.4382
Total trained pairs (M):	397.71 ;	loss: 0.4474
Total trained pairs (M):	398.15 ;	loss: 0.4521
Total trained pairs (M):	398.60 ;	loss: 0.4509
Total trained pairs (M):	399.05 ;	loss: 0.4493

Total trained pairs (M):	399.49 ;	loss: 0.4499
Total trained pairs (M):	399.93 ;	loss: 0.4485
Total trained pairs (M):	400.36 ;	loss: 0.4510
Total trained pairs (M):	400.79 ;	loss: 0.4508
Total trained pairs (M):	401.22 ;	loss: 0.4503
Total trained pairs (M):	401.64 ;	loss: 0.4505
Total trained pairs (M):	402.07 ;	loss: 0.4512
Total trained pairs (M):	402.50 ;	loss: 0.4512
Total trained pairs (M):	402.94 ;	loss: 0.4571
Total trained pairs (M):	403.38 ;	loss: 0.4575
Total trained pairs (M):	403.83 ;	loss: 0.4567
Total trained pairs (M):	404.28 ;	loss: 0.4560
Epoch 2 =====		
Total trained pairs (M):	404.80 ;	loss: 0.5877
Total trained pairs (M):	405.32 ;	loss: 0.5803
Total trained pairs (M):	405.85 ;	loss: 0.5702
Total trained pairs (M):	406.37 ;	loss: 0.5642
Total trained pairs (M):	406.88 ;	loss: 0.5594
Total trained pairs (M):	407.39 ;	loss: 0.5529
Total trained pairs (M):	407.90 ;	loss: 0.5513
Total trained pairs (M):	408.41 ;	loss: 0.5461
Total trained pairs (M):	408.91 ;	loss: 0.5427
Total trained pairs (M):	409.41 ;	loss: 0.5363
Total trained pairs (M):	409.91 ;	loss: 0.5341
Total trained pairs (M):	410.41 ;	loss: 0.5294
Total trained pairs (M):	410.91 ;	loss: 0.5269
Total trained pairs (M):	411.41 ;	loss: 0.5233
Total trained pairs (M):	411.90 ;	loss: 0.5190
Total trained pairs (M):	412.38 ;	loss: 0.5191
Total trained pairs (M):	412.87 ;	loss: 0.5180
Total trained pairs (M):	413.35 ;	loss: 0.5148
Total trained pairs (M):	413.83 ;	loss: 0.5117
Total trained pairs (M):	414.31 ;	loss: 0.5089
Total trained pairs (M):	414.79 ;	loss: 0.5054
Total trained pairs (M):	415.27 ;	loss: 0.5037
Total trained pairs (M):	415.74 ;	loss: 0.5006
Total trained pairs (M):	416.22 ;	loss: 0.4996
Total trained pairs (M):	416.69 ;	loss: 0.4965
Total trained pairs (M):	417.18 ;	loss: 0.4927
Total trained pairs (M):	417.67 ;	loss: 0.4901
Total trained pairs (M):	418.13 ;	loss: 0.4830
Total trained pairs (M):	418.60 ;	loss: 0.4817
Total trained pairs (M):	419.07 ;	loss: 0.4789
Total trained pairs (M):	419.54 ;	loss: 0.4785
Total trained pairs (M):	420.02 ;	loss: 0.4784
Total trained pairs (M):	420.50 ;	loss: 0.4763
Total trained pairs (M):	420.98 ;	loss: 0.4754
Total trained pairs (M):	421.47 ;	loss: 0.4739
Total trained pairs (M):	421.96 ;	loss: 0.4727
Total trained pairs (M):	422.44 ;	loss: 0.4709
Total trained pairs (M):	422.91 ;	loss: 0.4688
Total trained pairs (M):	423.39 ;	loss: 0.4672
Total trained pairs (M):	423.86 ;	loss: 0.4643
Total trained pairs (M):	424.34 ;	loss: 0.4622
Total trained pairs (M):	424.82 ;	loss: 0.4543
Total trained pairs (M):	425.30 ;	loss: 0.4539
Total trained pairs (M):	425.78 ;	loss: 0.4531
Total trained pairs (M):	426.26 ;	loss: 0.4505
Total trained pairs (M):	426.75 ;	loss: 0.4486

Total trained pairs (M):	427.23 ;	loss: 0.4472
Total trained pairs (M):	427.71 ;	loss: 0.4455
Total trained pairs (M):	428.19 ;	loss: 0.4445
Total trained pairs (M):	428.67 ;	loss: 0.4427
Total trained pairs (M):	429.16 ;	loss: 0.4417
Total trained pairs (M):	429.65 ;	loss: 0.4399
Total trained pairs (M):	430.13 ;	loss: 0.4378
Total trained pairs (M):	430.62 ;	loss: 0.4367
Total trained pairs (M):	431.11 ;	loss: 0.4333
Total trained pairs (M):	431.61 ;	loss: 0.4333
Total trained pairs (M):	432.12 ;	loss: 0.4351
Total trained pairs (M):	432.65 ;	loss: 0.4351
Total trained pairs (M):	433.18 ;	loss: 0.4351
Total trained pairs (M):	433.70 ;	loss: 0.4336
Total trained pairs (M):	434.21 ;	loss: 0.4324
Total trained pairs (M):	434.72 ;	loss: 0.4331
Total trained pairs (M):	435.23 ;	loss: 0.4311
Total trained pairs (M):	435.74 ;	loss: 0.4283
Total trained pairs (M):	436.24 ;	loss: 0.4261
Total trained pairs (M):	436.73 ;	loss: 0.4240
Total trained pairs (M):	437.21 ;	loss: 0.4219
Total trained pairs (M):	437.70 ;	loss: 0.4212
Total trained pairs (M):	438.18 ;	loss: 0.4189
Total trained pairs (M):	438.67 ;	loss: 0.4197
Total trained pairs (M):	439.16 ;	loss: 0.4173
Total trained pairs (M):	439.66 ;	loss: 0.4220
Total trained pairs (M):	440.16 ;	loss: 0.4202
Total trained pairs (M):	440.65 ;	loss: 0.4183
Total trained pairs (M):	441.14 ;	loss: 0.4174
Total trained pairs (M):	441.64 ;	loss: 0.4190
Total trained pairs (M):	442.14 ;	loss: 0.4213
Total trained pairs (M):	442.64 ;	loss: 0.4205
Total trained pairs (M):	443.13 ;	loss: 0.4211
Total trained pairs (M):	443.64 ;	loss: 0.4228
Total trained pairs (M):	444.15 ;	loss: 0.4214
Total trained pairs (M):	444.66 ;	loss: 0.4206
Total trained pairs (M):	445.18 ;	loss: 0.4207
Total trained pairs (M):	445.70 ;	loss: 0.4201
Total trained pairs (M):	446.22 ;	loss: 0.4185
Total trained pairs (M):	446.73 ;	loss: 0.4174
Total trained pairs (M):	447.26 ;	loss: 0.4226
Total trained pairs (M):	447.80 ;	loss: 0.4234
Total trained pairs (M):	448.34 ;	loss: 0.4220
Total trained pairs (M):	448.87 ;	loss: 0.4216
Total trained pairs (M):	449.42 ;	loss: 0.4203
Total trained pairs (M):	449.97 ;	loss: 0.4216
Total trained pairs (M):	450.53 ;	loss: 0.4197
Total trained pairs (M):	451.09 ;	loss: 0.4188
Total trained pairs (M):	451.63 ;	loss: 0.4195
Total trained pairs (M):	452.20 ;	loss: 0.4185
Total trained pairs (M):	452.75 ;	loss: 0.4182
Total trained pairs (M):	453.31 ;	loss: 0.4160
Total trained pairs (M):	453.86 ;	loss: 0.4177
Total trained pairs (M):	454.38 ;	loss: 0.4174
Total trained pairs (M):	454.90 ;	loss: 0.4165
Total trained pairs (M):	455.42 ;	loss: 0.4195
Total trained pairs (M):	455.93 ;	loss: 0.4199
Total trained pairs (M):	456.44 ;	loss: 0.4183
Total trained pairs (M):	456.95 ;	loss: 0.4170

Total trained pairs (M):	457.47 ;	loss: 0.4167
Total trained pairs (M):	457.98 ;	loss: 0.4163
Total trained pairs (M):	458.48 ;	loss: 0.4156
Total trained pairs (M):	458.99 ;	loss: 0.4167
Total trained pairs (M):	459.50 ;	loss: 0.4165
Total trained pairs (M):	460.01 ;	loss: 0.4170
Total trained pairs (M):	460.52 ;	loss: 0.4167
Total trained pairs (M):	461.03 ;	loss: 0.4150
Total trained pairs (M):	461.54 ;	loss: 0.4173
Total trained pairs (M):	462.05 ;	loss: 0.4151
Total trained pairs (M):	462.57 ;	loss: 0.4161
Total trained pairs (M):	463.09 ;	loss: 0.4170
Total trained pairs (M):	463.61 ;	loss: 0.4169
Total trained pairs (M):	464.14 ;	loss: 0.4154
Total trained pairs (M):	464.67 ;	loss: 0.4151
Total trained pairs (M):	465.20 ;	loss: 0.4146
Total trained pairs (M):	465.72 ;	loss: 0.4134
Total trained pairs (M):	466.25 ;	loss: 0.4118
Total trained pairs (M):	466.78 ;	loss: 0.4119
Total trained pairs (M):	467.32 ;	loss: 0.4118
Total trained pairs (M):	467.84 ;	loss: 0.4138
Total trained pairs (M):	468.36 ;	loss: 0.4141
Total trained pairs (M):	468.88 ;	loss: 0.4126
Total trained pairs (M):	469.40 ;	loss: 0.4116
Total trained pairs (M):	469.93 ;	loss: 0.4120
Total trained pairs (M):	470.45 ;	loss: 0.4128
Total trained pairs (M):	470.97 ;	loss: 0.4118
Total trained pairs (M):	471.49 ;	loss: 0.4114
Total trained pairs (M):	472.01 ;	loss: 0.4104
Total trained pairs (M):	472.52 ;	loss: 0.4103
Total trained pairs (M):	473.03 ;	loss: 0.4082
Total trained pairs (M):	473.55 ;	loss: 0.4076
Total trained pairs (M):	474.07 ;	loss: 0.4080
Total trained pairs (M):	474.60 ;	loss: 0.4068
Total trained pairs (M):	475.12 ;	loss: 0.4058
Total trained pairs (M):	475.65 ;	loss: 0.4080
Total trained pairs (M):	476.17 ;	loss: 0.4094
Total trained pairs (M):	476.71 ;	loss: 0.4127
Total trained pairs (M):	477.24 ;	loss: 0.4124
Total trained pairs (M):	477.77 ;	loss: 0.4132
Total trained pairs (M):	478.31 ;	loss: 0.4107
Total trained pairs (M):	478.85 ;	loss: 0.4110
Total trained pairs (M):	479.38 ;	loss: 0.4091
Total trained pairs (M):	479.92 ;	loss: 0.4079
Total trained pairs (M):	480.45 ;	loss: 0.4058
Total trained pairs (M):	480.98 ;	loss: 0.4063
Total trained pairs (M):	481.51 ;	loss: 0.4046
Total trained pairs (M):	482.04 ;	loss: 0.4049
Total trained pairs (M):	482.57 ;	loss: 0.4030
Total trained pairs (M):	483.10 ;	loss: 0.4028
Total trained pairs (M):	483.62 ;	loss: 0.4052
Total trained pairs (M):	484.12 ;	loss: 0.4066
Total trained pairs (M):	484.61 ;	loss: 0.4057
Total trained pairs (M):	485.10 ;	loss: 0.4041
Total trained pairs (M):	485.59 ;	loss: 0.4030
Total trained pairs (M):	486.08 ;	loss: 0.4019
Total trained pairs (M):	486.56 ;	loss: 0.4012
Total trained pairs (M):	487.05 ;	loss: 0.4010
Total trained pairs (M):	487.57 ;	loss: 0.4018

Total trained pairs (M):	488.08 ;	loss: 0.4015
Total trained pairs (M):	488.59 ;	loss: 0.4008
Total trained pairs (M):	489.11 ;	loss: 0.4000
Total trained pairs (M):	489.63 ;	loss: 0.4000
Total trained pairs (M):	490.15 ;	loss: 0.3983
Total trained pairs (M):	490.66 ;	loss: 0.3980
Total trained pairs (M):	491.18 ;	loss: 0.3958
Total trained pairs (M):	491.68 ;	loss: 0.3982
Total trained pairs (M):	492.19 ;	loss: 0.3966
Total trained pairs (M):	492.69 ;	loss: 0.3969
Total trained pairs (M):	493.20 ;	loss: 0.3942
Total trained pairs (M):	493.69 ;	loss: 0.3961
Total trained pairs (M):	494.17 ;	loss: 0.3946
Total trained pairs (M):	494.65 ;	loss: 0.3945
Total trained pairs (M):	495.12 ;	loss: 0.3935
Total trained pairs (M):	495.58 ;	loss: 0.3961
Total trained pairs (M):	496.04 ;	loss: 0.3958
Total trained pairs (M):	496.50 ;	loss: 0.3939
Total trained pairs (M):	496.94 ;	loss: 0.3954
Total trained pairs (M):	497.38 ;	loss: 0.3945
Total trained pairs (M):	497.82 ;	loss: 0.3931
Total trained pairs (M):	498.27 ;	loss: 0.3908
Total trained pairs (M):	498.69 ;	loss: 0.3937
Total trained pairs (M):	499.12 ;	loss: 0.3954
Total trained pairs (M):	499.54 ;	loss: 0.3930
Total trained pairs (M):	499.96 ;	loss: 0.3935
Total trained pairs (M):	500.39 ;	loss: 0.3989
Total trained pairs (M):	500.80 ;	loss: 0.4011
Total trained pairs (M):	501.23 ;	loss: 0.4026
Total trained pairs (M):	501.64 ;	loss: 0.4037
Total trained pairs (M):	502.06 ;	loss: 0.4019
Total trained pairs (M):	502.46 ;	loss: 0.4047
Total trained pairs (M):	502.88 ;	loss: 0.4055
Total trained pairs (M):	503.30 ;	loss: 0.4071
Total trained pairs (M):	503.74 ;	loss: 0.4121
Total trained pairs (M):	504.20 ;	loss: 0.4176
Total trained pairs (M):	504.66 ;	loss: 0.4177
Total trained pairs (M):	505.11 ;	loss: 0.4176
Total trained pairs (M):	505.55 ;	loss: 0.4163
Total trained pairs (M):	506.00 ;	loss: 0.4155
Total trained pairs (M):	506.45 ;	loss: 0.4144
Total trained pairs (M):	506.89 ;	loss: 0.4134
Total trained pairs (M):	507.33 ;	loss: 0.4132
Total trained pairs (M):	507.78 ;	loss: 0.4125
Total trained pairs (M):	508.22 ;	loss: 0.4118
Total trained pairs (M):	508.67 ;	loss: 0.4115
Total trained pairs (M):	509.12 ;	loss: 0.4121
Total trained pairs (M):	509.57 ;	loss: 0.4112
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Total trained pairs (M):	510.47 ;	loss: 0.4116
Total trained pairs (M):	510.92 ;	loss: 0.4105
Total trained pairs (M):	511.36 ;	loss: 0.4088
Total trained pairs (M):	511.80 ;	loss: 0.4101
Total trained pairs (M):	512.24 ;	loss: 0.4080
Total trained pairs (M):	512.69 ;	loss: 0.4115
Total trained pairs (M):	513.12 ;	loss: 0.4113
Total trained pairs (M):	513.56 ;	loss: 0.4090
Total trained pairs (M):	514.00 ;	loss: 0.4075
Total trained pairs (M):	514.45 ;	loss: 0.4070

Total trained pairs (M):	514.88 ;	loss: 0.4061
Total trained pairs (M):	515.33 ;	loss: 0.4089
Total trained pairs (M):	515.77 ;	loss: 0.4089
Total trained pairs (M):	516.21 ;	loss: 0.4101
Total trained pairs (M):	516.66 ;	loss: 0.4071
Total trained pairs (M):	517.10 ;	loss: 0.4069
Total trained pairs (M):	517.55 ;	loss: 0.4085
Total trained pairs (M):	517.99 ;	loss: 0.4087
Total trained pairs (M):	518.44 ;	loss: 0.4080
Total trained pairs (M):	518.89 ;	loss: 0.4095
Total trained pairs (M):	519.34 ;	loss: 0.4119
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Total trained pairs (M):	521.19 ;	loss: 0.4146
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Total trained pairs (M):	522.10 ;	loss: 0.4119
Total trained pairs (M):	522.55 ;	loss: 0.4119
Total trained pairs (M):	523.01 ;	loss: 0.4105
Total trained pairs (M):	523.44 ;	loss: 0.4145
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Total trained pairs (M):	524.75 ;	loss: 0.4173
Total trained pairs (M):	525.18 ;	loss: 0.4151
Total trained pairs (M):	525.62 ;	loss: 0.4152
Total trained pairs (M):	526.06 ;	loss: 0.4134
Total trained pairs (M):	526.54 ;	loss: 0.4274
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Total trained pairs (M):	527.95 ;	loss: 0.4251
Total trained pairs (M):	528.43 ;	loss: 0.4254
Total trained pairs (M):	528.91 ;	loss: 0.4248
Total trained pairs (M):	529.39 ;	loss: 0.4241
Total trained pairs (M):	529.86 ;	loss: 0.4224
Total trained pairs (M):	530.34 ;	loss: 0.4210
Total trained pairs (M):	530.81 ;	loss: 0.4230
Total trained pairs (M):	531.28 ;	loss: 0.4196
Total trained pairs (M):	531.76 ;	loss: 0.4188
Total trained pairs (M):	532.24 ;	loss: 0.4190
Total trained pairs (M):	532.71 ;	loss: 0.4201
Total trained pairs (M):	533.17 ;	loss: 0.4222
Total trained pairs (M):	533.62 ;	loss: 0.4196
Total trained pairs (M):	534.09 ;	loss: 0.4185
Total trained pairs (M):	534.56 ;	loss: 0.4206
Total trained pairs (M):	535.02 ;	loss: 0.4212
Total trained pairs (M):	535.49 ;	loss: 0.4197
Total trained pairs (M):	535.96 ;	loss: 0.4190
Total trained pairs (M):	536.44 ;	loss: 0.4189
Total trained pairs (M):	536.92 ;	loss: 0.4176
Total trained pairs (M):	537.41 ;	loss: 0.4176
Total trained pairs (M):	537.90 ;	loss: 0.4189
Total trained pairs (M):	538.41 ;	loss: 0.4178
Total trained pairs (M):	538.91 ;	loss: 0.4166
Total trained pairs (M):	539.43 ;	loss: 0.4193
Total trained pairs (M):	539.94 ;	loss: 0.4164
Total trained pairs (M):	540.45 ;	loss: 0.4177
Total trained pairs (M):	540.96 ;	loss: 0.4160
Total trained pairs (M):	541.47 ;	loss: 0.4150
Total trained pairs (M):	541.98 ;	loss: 0.4139

Total trained pairs (M):	542.49 ;	loss: 0.4115
Total trained pairs (M):	543.01 ;	loss: 0.4120
Total trained pairs (M):	543.53 ;	loss: 0.4093
Total trained pairs (M):	544.04 ;	loss: 0.4083
Total trained pairs (M):	544.56 ;	loss: 0.4063
Total trained pairs (M):	545.07 ;	loss: 0.4081
Total trained pairs (M):	545.57 ;	loss: 0.4066
Total trained pairs (M):	546.09 ;	loss: 0.4067
Total trained pairs (M):	546.59 ;	loss: 0.4085
Total trained pairs (M):	547.09 ;	loss: 0.4068
Total trained pairs (M):	547.59 ;	loss: 0.4069
Total trained pairs (M):	548.08 ;	loss: 0.4061
Total trained pairs (M):	548.57 ;	loss: 0.4064
Total trained pairs (M):	549.07 ;	loss: 0.4041
Total trained pairs (M):	549.55 ;	loss: 0.4092
Total trained pairs (M):	550.03 ;	loss: 0.4118
Total trained pairs (M):	550.50 ;	loss: 0.4145
Total trained pairs (M):	550.95 ;	loss: 0.4138
Total trained pairs (M):	551.40 ;	loss: 0.4132
Total trained pairs (M):	551.84 ;	loss: 0.4120
Total trained pairs (M):	552.29 ;	loss: 0.4096
Total trained pairs (M):	552.75 ;	loss: 0.4107
Total trained pairs (M):	553.20 ;	loss: 0.4090
Total trained pairs (M):	553.66 ;	loss: 0.4083
Total trained pairs (M):	554.12 ;	loss: 0.4087
Total trained pairs (M):	554.58 ;	loss: 0.4078
Total trained pairs (M):	555.04 ;	loss: 0.4087
Total trained pairs (M):	555.51 ;	loss: 0.4095
Total trained pairs (M):	555.97 ;	loss: 0.4089
Total trained pairs (M):	556.43 ;	loss: 0.4070
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Total trained pairs (M):	557.36 ;	loss: 0.4092
Total trained pairs (M):	557.83 ;	loss: 0.4106
Total trained pairs (M):	558.30 ;	loss: 0.4106
Total trained pairs (M):	558.78 ;	loss: 0.4096
Total trained pairs (M):	559.26 ;	loss: 0.4097
Total trained pairs (M):	559.73 ;	loss: 0.4093
Total trained pairs (M):	560.20 ;	loss: 0.4086
Total trained pairs (M):	560.68 ;	loss: 0.4083
Total trained pairs (M):	561.15 ;	loss: 0.4081
Total trained pairs (M):	561.63 ;	loss: 0.4065
Total trained pairs (M):	562.11 ;	loss: 0.4035
Total trained pairs (M):	562.58 ;	loss: 0.4078
Total trained pairs (M):	563.06 ;	loss: 0.4067
Total trained pairs (M):	563.53 ;	loss: 0.4071
Total trained pairs (M):	564.00 ;	loss: 0.4059
Total trained pairs (M):	564.48 ;	loss: 0.4046
Total trained pairs (M):	564.95 ;	loss: 0.4041
Total trained pairs (M):	565.43 ;	loss: 0.4041
Total trained pairs (M):	565.91 ;	loss: 0.4053
Total trained pairs (M):	566.38 ;	loss: 0.4056
Total trained pairs (M):	566.85 ;	loss: 0.4052
Total trained pairs (M):	567.31 ;	loss: 0.4047
Total trained pairs (M):	567.78 ;	loss: 0.4118
Total trained pairs (M):	568.25 ;	loss: 0.4114
Total trained pairs (M):	568.72 ;	loss: 0.4111
Total trained pairs (M):	569.19 ;	loss: 0.4090
Total trained pairs (M):	569.66 ;	loss: 0.4104
Total trained pairs (M):	570.13 ;	loss: 0.4115

Total trained pairs (M):	570.61 ;	loss: 0.4096
Total trained pairs (M):	571.08 ;	loss: 0.4101
Total trained pairs (M):	571.54 ;	loss: 0.4085
Total trained pairs (M):	572.01 ;	loss: 0.4095
Total trained pairs (M):	572.48 ;	loss: 0.4110
Total trained pairs (M):	572.96 ;	loss: 0.4093
Total trained pairs (M):	573.44 ;	loss: 0.4098
Total trained pairs (M):	573.92 ;	loss: 0.4100
Total trained pairs (M):	574.37 ;	loss: 0.4118
Total trained pairs (M):	574.82 ;	loss: 0.4132
Total trained pairs (M):	575.28 ;	loss: 0.4176
Total trained pairs (M):	575.74 ;	loss: 0.4174
Total trained pairs (M):	576.19 ;	loss: 0.4179
Total trained pairs (M):	576.64 ;	loss: 0.4166
Total trained pairs (M):	577.10 ;	loss: 0.4136
Total trained pairs (M):	577.55 ;	loss: 0.4124
Total trained pairs (M):	578.01 ;	loss: 0.4100
Total trained pairs (M):	578.47 ;	loss: 0.4090
Total trained pairs (M):	578.92 ;	loss: 0.4083
Total trained pairs (M):	579.38 ;	loss: 0.4085
Total trained pairs (M):	579.83 ;	loss: 0.4113
Total trained pairs (M):	580.29 ;	loss: 0.4102
Total trained pairs (M):	580.75 ;	loss: 0.4089
Total trained pairs (M):	581.21 ;	loss: 0.4085
Total trained pairs (M):	581.66 ;	loss: 0.4107
Total trained pairs (M):	582.11 ;	loss: 0.4131
Total trained pairs (M):	582.56 ;	loss: 0.4111
Total trained pairs (M):	583.00 ;	loss: 0.4121
Total trained pairs (M):	583.44 ;	loss: 0.4152
Total trained pairs (M):	583.88 ;	loss: 0.4157
Total trained pairs (M):	584.31 ;	loss: 0.4142
Total trained pairs (M):	584.73 ;	loss: 0.4175
Total trained pairs (M):	585.15 ;	loss: 0.4186
Total trained pairs (M):	585.56 ;	loss: 0.4189
Total trained pairs (M):	585.97 ;	loss: 0.4178
Total trained pairs (M):	586.37 ;	loss: 0.4169
Total trained pairs (M):	586.78 ;	loss: 0.4187
Total trained pairs (M):	587.18 ;	loss: 0.4189
Total trained pairs (M):	587.59 ;	loss: 0.4166
Total trained pairs (M):	587.99 ;	loss: 0.4140
Total trained pairs (M):	588.40 ;	loss: 0.4145
Total trained pairs (M):	588.80 ;	loss: 0.4112
Total trained pairs (M):	589.21 ;	loss: 0.4151
Total trained pairs (M):	589.61 ;	loss: 0.4139
Total trained pairs (M):	590.02 ;	loss: 0.4133
Total trained pairs (M):	590.43 ;	loss: 0.4131
Total trained pairs (M):	590.84 ;	loss: 0.4133
Total trained pairs (M):	591.25 ;	loss: 0.4114
Total trained pairs (M):	591.66 ;	loss: 0.4169
Total trained pairs (M):	592.08 ;	loss: 0.4157
Total trained pairs (M):	592.49 ;	loss: 0.4227
Total trained pairs (M):	592.91 ;	loss: 0.4227
Total trained pairs (M):	593.33 ;	loss: 0.4215
Total trained pairs (M):	593.74 ;	loss: 0.4192
Total trained pairs (M):	594.17 ;	loss: 0.4237
Total trained pairs (M):	594.60 ;	loss: 0.4247
Total trained pairs (M):	595.02 ;	loss: 0.4268
Total trained pairs (M):	595.44 ;	loss: 0.4248
Total trained pairs (M):	595.87 ;	loss: 0.4239

Total trained pairs (M):	596.30 ;	loss: 0.4241
Total trained pairs (M):	596.72 ;	loss: 0.4230
Total trained pairs (M):	597.17 ;	loss: 0.4260
Total trained pairs (M):	597.62 ;	loss: 0.4289
Total trained pairs (M):	598.07 ;	loss: 0.4273
Total trained pairs (M):	598.52 ;	loss: 0.4257
Total trained pairs (M):	598.96 ;	loss: 0.4263
Total trained pairs (M):	599.40 ;	loss: 0.4253
Total trained pairs (M):	599.85 ;	loss: 0.4354
Total trained pairs (M):	600.30 ;	loss: 0.4397
Total trained pairs (M):	600.75 ;	loss: 0.4393
Total trained pairs (M):	601.19 ;	loss: 0.4378
Total trained pairs (M):	601.63 ;	loss: 0.4378
Total trained pairs (M):	602.07 ;	loss: 0.4370
Total trained pairs (M):	602.51 ;	loss: 0.4409
Total trained pairs (M):	602.94 ;	loss: 0.4412
Total trained pairs (M):	603.36 ;	loss: 0.4397
Total trained pairs (M):	603.79 ;	loss: 0.4404
Total trained pairs (M):	604.21 ;	loss: 0.4422
Total trained pairs (M):	604.65 ;	loss: 0.4427
Total trained pairs (M):	605.08 ;	loss: 0.4482
Total trained pairs (M):	605.52 ;	loss: 0.4482
Total trained pairs (M):	605.98 ;	loss: 0.4480
Total trained pairs (M):	606.43 ;	loss: 0.4470
Epoch 3 =====		
Total trained pairs (M):	606.94 ;	loss: 0.5819
Total trained pairs (M):	607.47 ;	loss: 0.5740
Total trained pairs (M):	607.99 ;	loss: 0.5630
Total trained pairs (M):	608.51 ;	loss: 0.5568
Total trained pairs (M):	609.02 ;	loss: 0.5512
Total trained pairs (M):	609.53 ;	loss: 0.5455
Total trained pairs (M):	610.05 ;	loss: 0.5411
Total trained pairs (M):	610.55 ;	loss: 0.5366
Total trained pairs (M):	611.05 ;	loss: 0.5329
Total trained pairs (M):	611.55 ;	loss: 0.5259
Total trained pairs (M):	612.05 ;	loss: 0.5233
Total trained pairs (M):	612.55 ;	loss: 0.5186
Total trained pairs (M):	613.05 ;	loss: 0.5167
Total trained pairs (M):	613.55 ;	loss: 0.5126
Total trained pairs (M):	614.04 ;	loss: 0.5072
Total trained pairs (M):	614.53 ;	loss: 0.5068
Total trained pairs (M):	615.01 ;	loss: 0.5048
Total trained pairs (M):	615.49 ;	loss: 0.5005
Total trained pairs (M):	615.97 ;	loss: 0.5000
Total trained pairs (M):	616.45 ;	loss: 0.4970
Total trained pairs (M):	616.93 ;	loss: 0.4919
Total trained pairs (M):	617.41 ;	loss: 0.4888
Total trained pairs (M):	617.88 ;	loss: 0.4891
Total trained pairs (M):	618.36 ;	loss: 0.4855
Total trained pairs (M):	618.83 ;	loss: 0.4826
Total trained pairs (M):	619.32 ;	loss: 0.4784
Total trained pairs (M):	619.81 ;	loss: 0.4762
Total trained pairs (M):	620.27 ;	loss: 0.4672
Total trained pairs (M):	620.74 ;	loss: 0.4667
Total trained pairs (M):	621.21 ;	loss: 0.4638
Total trained pairs (M):	621.68 ;	loss: 0.4624
Total trained pairs (M):	622.16 ;	loss: 0.4624
Total trained pairs (M):	622.64 ;	loss: 0.4607
Total trained pairs (M):	623.13 ;	loss: 0.4575

Total trained pairs (M):	623.62 ;	loss: 0.4563
Total trained pairs (M):	624.10 ;	loss: 0.4550
Total trained pairs (M):	624.58 ;	loss: 0.4536
Total trained pairs (M):	625.05 ;	loss: 0.4505
Total trained pairs (M):	625.53 ;	loss: 0.4485
Total trained pairs (M):	626.00 ;	loss: 0.4469
Total trained pairs (M):	626.48 ;	loss: 0.4444
Total trained pairs (M):	626.96 ;	loss: 0.4367
Total trained pairs (M):	627.44 ;	loss: 0.4357
Total trained pairs (M):	627.92 ;	loss: 0.4334
Total trained pairs (M):	628.40 ;	loss: 0.4311
Total trained pairs (M):	628.89 ;	loss: 0.4299
Total trained pairs (M):	629.37 ;	loss: 0.4287
Total trained pairs (M):	629.85 ;	loss: 0.4266
Total trained pairs (M):	630.33 ;	loss: 0.4248
Total trained pairs (M):	630.81 ;	loss: 0.4219
Total trained pairs (M):	631.30 ;	loss: 0.4217
Total trained pairs (M):	631.79 ;	loss: 0.4193
Total trained pairs (M):	632.28 ;	loss: 0.4181
Total trained pairs (M):	632.76 ;	loss: 0.4159
Total trained pairs (M):	633.25 ;	loss: 0.4132
Total trained pairs (M):	633.75 ;	loss: 0.4126
Total trained pairs (M):	634.27 ;	loss: 0.4139
Total trained pairs (M):	634.80 ;	loss: 0.4155
Total trained pairs (M):	635.32 ;	loss: 0.4135
Total trained pairs (M):	635.84 ;	loss: 0.4127
Total trained pairs (M):	636.35 ;	loss: 0.4114
Total trained pairs (M):	636.87 ;	loss: 0.4108
Total trained pairs (M):	637.38 ;	loss: 0.4091
Total trained pairs (M):	637.89 ;	loss: 0.4070
Total trained pairs (M):	638.38 ;	loss: 0.4041
Total trained pairs (M):	638.87 ;	loss: 0.4011
Total trained pairs (M):	639.35 ;	loss: 0.3991
Total trained pairs (M):	639.84 ;	loss: 0.3985
Total trained pairs (M):	640.33 ;	loss: 0.3973
Total trained pairs (M):	640.82 ;	loss: 0.3964
Total trained pairs (M):	641.30 ;	loss: 0.3951
Total trained pairs (M):	641.80 ;	loss: 0.3990
Total trained pairs (M):	642.30 ;	loss: 0.3974
Total trained pairs (M):	642.79 ;	loss: 0.3956
Total trained pairs (M):	643.28 ;	loss: 0.3934
Total trained pairs (M):	643.78 ;	loss: 0.3957
Total trained pairs (M):	644.28 ;	loss: 0.3971
Total trained pairs (M):	644.78 ;	loss: 0.3948
Total trained pairs (M):	645.27 ;	loss: 0.3966
Total trained pairs (M):	645.78 ;	loss: 0.3981
Total trained pairs (M):	646.29 ;	loss: 0.3970
Total trained pairs (M):	646.80 ;	loss: 0.3963
Total trained pairs (M):	647.33 ;	loss: 0.3973
Total trained pairs (M):	647.84 ;	loss: 0.3978
Total trained pairs (M):	648.36 ;	loss: 0.3944
Total trained pairs (M):	648.87 ;	loss: 0.3922
Total trained pairs (M):	649.40 ;	loss: 0.3982
Total trained pairs (M):	649.94 ;	loss: 0.3987
Total trained pairs (M):	650.48 ;	loss: 0.3972
Total trained pairs (M):	651.02 ;	loss: 0.3985
Total trained pairs (M):	651.56 ;	loss: 0.3963
Total trained pairs (M):	652.11 ;	loss: 0.3975
Total trained pairs (M):	652.67 ;	loss: 0.3946

Total trained pairs (M):	653.23 ;	loss: 0.3949
Total trained pairs (M):	653.78 ;	loss: 0.3931
Total trained pairs (M):	654.34 ;	loss: 0.3931
Total trained pairs (M):	654.90 ;	loss: 0.3934
Total trained pairs (M):	655.45 ;	loss: 0.3914
Total trained pairs (M):	656.00 ;	loss: 0.3914
Total trained pairs (M):	656.52 ;	loss: 0.3925
Total trained pairs (M):	657.04 ;	loss: 0.3902
Total trained pairs (M):	657.56 ;	loss: 0.3942
Total trained pairs (M):	658.07 ;	loss: 0.3935
Total trained pairs (M):	658.58 ;	loss: 0.3931
Total trained pairs (M):	659.09 ;	loss: 0.3921
Total trained pairs (M):	659.61 ;	loss: 0.3906
Total trained pairs (M):	660.12 ;	loss: 0.3907
Total trained pairs (M):	660.62 ;	loss: 0.3890
Total trained pairs (M):	661.13 ;	loss: 0.3900
Total trained pairs (M):	661.64 ;	loss: 0.3894
Total trained pairs (M):	662.15 ;	loss: 0.3905
Total trained pairs (M):	662.66 ;	loss: 0.3905
Total trained pairs (M):	663.17 ;	loss: 0.3875
Total trained pairs (M):	663.68 ;	loss: 0.3895
Total trained pairs (M):	664.20 ;	loss: 0.3875
Total trained pairs (M):	664.71 ;	loss: 0.3885
Total trained pairs (M):	665.23 ;	loss: 0.3903
Total trained pairs (M):	665.76 ;	loss: 0.3887
Total trained pairs (M):	666.28 ;	loss: 0.3884
Total trained pairs (M):	666.81 ;	loss: 0.3891
Total trained pairs (M):	667.34 ;	loss: 0.3876
Total trained pairs (M):	667.86 ;	loss: 0.3869
Total trained pairs (M):	668.39 ;	loss: 0.3845
Total trained pairs (M):	668.92 ;	loss: 0.3846
Total trained pairs (M):	669.46 ;	loss: 0.3833
Total trained pairs (M):	669.98 ;	loss: 0.3871
Total trained pairs (M):	670.50 ;	loss: 0.3865
Total trained pairs (M):	671.03 ;	loss: 0.3829
Total trained pairs (M):	671.54 ;	loss: 0.3830
Total trained pairs (M):	672.07 ;	loss: 0.3852
Total trained pairs (M):	672.60 ;	loss: 0.3846
Total trained pairs (M):	673.11 ;	loss: 0.3835
Total trained pairs (M):	673.63 ;	loss: 0.3826
Total trained pairs (M):	674.15 ;	loss: 0.3818
Total trained pairs (M):	674.66 ;	loss: 0.3811
Total trained pairs (M):	675.17 ;	loss: 0.3797
Total trained pairs (M):	675.69 ;	loss: 0.3784
Total trained pairs (M):	676.21 ;	loss: 0.3808
Total trained pairs (M):	676.74 ;	loss: 0.3785
Total trained pairs (M):	677.27 ;	loss: 0.3769
Total trained pairs (M):	677.80 ;	loss: 0.3801
Total trained pairs (M):	678.31 ;	loss: 0.3794
Total trained pairs (M):	678.85 ;	loss: 0.3848
Total trained pairs (M):	679.38 ;	loss: 0.3845
Total trained pairs (M):	679.92 ;	loss: 0.3842
Total trained pairs (M):	680.45 ;	loss: 0.3826
Total trained pairs (M):	680.99 ;	loss: 0.3827
Total trained pairs (M):	681.52 ;	loss: 0.3808
Total trained pairs (M):	682.06 ;	loss: 0.3791
Total trained pairs (M):	682.60 ;	loss: 0.3761
Total trained pairs (M):	683.12 ;	loss: 0.3786
Total trained pairs (M):	683.65 ;	loss: 0.3775

Total trained pairs (M):	684.18 ;	loss: 0.3766
Total trained pairs (M):	684.71 ;	loss: 0.3749
Total trained pairs (M):	685.24 ;	loss: 0.3735
Total trained pairs (M):	685.76 ;	loss: 0.3755
Total trained pairs (M):	686.26 ;	loss: 0.3772
Total trained pairs (M):	686.75 ;	loss: 0.3774
Total trained pairs (M):	687.24 ;	loss: 0.3747
Total trained pairs (M):	687.73 ;	loss: 0.3746
Total trained pairs (M):	688.22 ;	loss: 0.3730
Total trained pairs (M):	688.70 ;	loss: 0.3711
Total trained pairs (M):	689.20 ;	loss: 0.3726
Total trained pairs (M):	689.71 ;	loss: 0.3723
Total trained pairs (M):	690.22 ;	loss: 0.3723
Total trained pairs (M):	690.73 ;	loss: 0.3704
Total trained pairs (M):	691.25 ;	loss: 0.3710
Total trained pairs (M):	691.77 ;	loss: 0.3705
Total trained pairs (M):	692.29 ;	loss: 0.3701
Total trained pairs (M):	692.80 ;	loss: 0.3688
Total trained pairs (M):	693.32 ;	loss: 0.3667
Total trained pairs (M):	693.83 ;	loss: 0.3691
Total trained pairs (M):	694.33 ;	loss: 0.3688
Total trained pairs (M):	694.84 ;	loss: 0.3688
Total trained pairs (M):	695.34 ;	loss: 0.3654
Total trained pairs (M):	695.83 ;	loss: 0.3664
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Total trained pairs (M):	697.26 ;	loss: 0.3644
Total trained pairs (M):	697.72 ;	loss: 0.3672
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Total trained pairs (M):	698.64 ;	loss: 0.3636
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Total trained pairs (M):	699.52 ;	loss: 0.3653
Total trained pairs (M):	699.97 ;	loss: 0.3635
Total trained pairs (M):	700.41 ;	loss: 0.3629
Total trained pairs (M):	700.83 ;	loss: 0.3643
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Total trained pairs (M):	702.10 ;	loss: 0.3647
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Total trained pairs (M):	706.34 ;	loss: 0.3891
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Total trained pairs (M):	707.69 ;	loss: 0.3883
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Total trained pairs (M):	709.47 ;	loss: 0.3828
Total trained pairs (M):	709.92 ;	loss: 0.3824
Total trained pairs (M):	710.37 ;	loss: 0.3820
Total trained pairs (M):	710.82 ;	loss: 0.3833
Total trained pairs (M):	711.26 ;	loss: 0.3818

Total trained pairs (M):	711.71 ;	loss: 0.3830
Total trained pairs (M):	712.16 ;	loss: 0.3807
Total trained pairs (M):	712.61 ;	loss: 0.3822
Total trained pairs (M):	713.06 ;	loss: 0.3814
Total trained pairs (M):	713.51 ;	loss: 0.3803
Total trained pairs (M):	713.94 ;	loss: 0.3817
Total trained pairs (M):	714.38 ;	loss: 0.3789
Total trained pairs (M):	714.83 ;	loss: 0.3818
Total trained pairs (M):	715.27 ;	loss: 0.3836
Total trained pairs (M):	715.71 ;	loss: 0.3804
Total trained pairs (M):	716.15 ;	loss: 0.3786
Total trained pairs (M):	716.59 ;	loss: 0.3774
Total trained pairs (M):	717.02 ;	loss: 0.3769
Total trained pairs (M):	717.47 ;	loss: 0.3801
Total trained pairs (M):	717.91 ;	loss: 0.3797
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Total trained pairs (M):	724.24 ;	loss: 0.3812
Total trained pairs (M):	724.70 ;	loss: 0.3833
Total trained pairs (M):	725.15 ;	loss: 0.3807
Total trained pairs (M):	725.58 ;	loss: 0.3843
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Total trained pairs (M):	726.46 ;	loss: 0.3866
Total trained pairs (M):	726.89 ;	loss: 0.3853
Total trained pairs (M):	727.33 ;	loss: 0.3846
Total trained pairs (M):	727.76 ;	loss: 0.3843
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Total trained pairs (M):	728.68 ;	loss: 0.3975
Total trained pairs (M):	729.15 ;	loss: 0.3963
Total trained pairs (M):	729.62 ;	loss: 0.3943
Total trained pairs (M):	730.10 ;	loss: 0.3951
Total trained pairs (M):	730.58 ;	loss: 0.3960
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Total trained pairs (M):	731.53 ;	loss: 0.3934
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Total trained pairs (M):	732.95 ;	loss: 0.3916
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Total trained pairs (M):	734.85 ;	loss: 0.3899
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Total trained pairs (M):	735.77 ;	loss: 0.3891
Total trained pairs (M):	736.23 ;	loss: 0.3869
Total trained pairs (M):	736.70 ;	loss: 0.3895
Total trained pairs (M):	737.16 ;	loss: 0.3900
Total trained pairs (M):	737.63 ;	loss: 0.3900
Total trained pairs (M):	738.10 ;	loss: 0.3874

Total trained pairs (M):	738.58 ;	loss: 0.3891
Total trained pairs (M):	739.06 ;	loss: 0.3880
Total trained pairs (M):	739.55 ;	loss: 0.3871
Total trained pairs (M):	740.05 ;	loss: 0.3878
Total trained pairs (M):	740.55 ;	loss: 0.3876
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Total trained pairs (M):	741.57 ;	loss: 0.3871
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Total trained pairs (M):	743.61 ;	loss: 0.3851
Total trained pairs (M):	744.12 ;	loss: 0.3830
Total trained pairs (M):	744.63 ;	loss: 0.3811
Total trained pairs (M):	745.15 ;	loss: 0.3811
Total trained pairs (M):	745.67 ;	loss: 0.3785
Total trained pairs (M):	746.18 ;	loss: 0.3772
Total trained pairs (M):	746.70 ;	loss: 0.3758
Total trained pairs (M):	747.21 ;	loss: 0.3778
Total trained pairs (M):	747.71 ;	loss: 0.3752
Total trained pairs (M):	748.23 ;	loss: 0.3771
Total trained pairs (M):	748.73 ;	loss: 0.3776
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Total trained pairs (M):	749.73 ;	loss: 0.3767
Total trained pairs (M):	750.22 ;	loss: 0.3750
Total trained pairs (M):	750.72 ;	loss: 0.3748
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Total trained pairs (M):	751.69 ;	loss: 0.3776
Total trained pairs (M):	752.17 ;	loss: 0.3822
Total trained pairs (M):	752.64 ;	loss: 0.3823
Total trained pairs (M):	753.09 ;	loss: 0.3832
Total trained pairs (M):	753.54 ;	loss: 0.3825
Total trained pairs (M):	753.99 ;	loss: 0.3796
Total trained pairs (M):	754.44 ;	loss: 0.3788
Total trained pairs (M):	754.89 ;	loss: 0.3792
Total trained pairs (M):	755.34 ;	loss: 0.3779
Total trained pairs (M):	755.80 ;	loss: 0.3778
Total trained pairs (M):	756.26 ;	loss: 0.3791
Total trained pairs (M):	756.72 ;	loss: 0.3776
Total trained pairs (M):	757.18 ;	loss: 0.3777
Total trained pairs (M):	757.65 ;	loss: 0.3799
Total trained pairs (M):	758.11 ;	loss: 0.3792
Total trained pairs (M):	758.57 ;	loss: 0.3771
Total trained pairs (M):	759.04 ;	loss: 0.3775
Total trained pairs (M):	759.50 ;	loss: 0.3782
Total trained pairs (M):	759.97 ;	loss: 0.3804
Total trained pairs (M):	760.45 ;	loss: 0.3807
Total trained pairs (M):	760.92 ;	loss: 0.3796
Total trained pairs (M):	761.40 ;	loss: 0.3786
Total trained pairs (M):	761.87 ;	loss: 0.3790
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Total trained pairs (M):	762.82 ;	loss: 0.3791
Total trained pairs (M):	763.30 ;	loss: 0.3778
Total trained pairs (M):	763.77 ;	loss: 0.3752
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Total trained pairs (M):	765.20 ;	loss: 0.3769
Total trained pairs (M):	765.67 ;	loss: 0.3756
Total trained pairs (M):	766.15 ;	loss: 0.3767
Total trained pairs (M):	766.62 ;	loss: 0.3746

Total trained pairs (M):	767.09 ;	loss: 0.3739
Total trained pairs (M):	767.57 ;	loss: 0.3751
Total trained pairs (M):	768.05 ;	loss: 0.3752
Total trained pairs (M):	768.52 ;	loss: 0.3758
Total trained pairs (M):	768.99 ;	loss: 0.3760
Total trained pairs (M):	769.45 ;	loss: 0.3744
Total trained pairs (M):	769.92 ;	loss: 0.3817
Total trained pairs (M):	770.39 ;	loss: 0.3828
Total trained pairs (M):	770.86 ;	loss: 0.3803
Total trained pairs (M):	771.33 ;	loss: 0.3786
Total trained pairs (M):	771.80 ;	loss: 0.3812
Total trained pairs (M):	772.27 ;	loss: 0.3805
Total trained pairs (M):	772.75 ;	loss: 0.3807
Total trained pairs (M):	773.22 ;	loss: 0.3808
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Total trained pairs (M):	774.16 ;	loss: 0.3809
Total trained pairs (M):	774.62 ;	loss: 0.3807
Total trained pairs (M):	775.10 ;	loss: 0.3797
Total trained pairs (M):	775.58 ;	loss: 0.3816
Total trained pairs (M):	776.06 ;	loss: 0.3818
Total trained pairs (M):	776.51 ;	loss: 0.3836
Total trained pairs (M):	776.96 ;	loss: 0.3858
Total trained pairs (M):	777.42 ;	loss: 0.3916
Total trained pairs (M):	777.88 ;	loss: 0.3887
Total trained pairs (M):	778.33 ;	loss: 0.3901
Total trained pairs (M):	778.78 ;	loss: 0.3882
Total trained pairs (M):	779.24 ;	loss: 0.3868
Total trained pairs (M):	779.69 ;	loss: 0.3847
Total trained pairs (M):	780.15 ;	loss: 0.3829
Total trained pairs (M):	780.61 ;	loss: 0.3819
Total trained pairs (M):	781.06 ;	loss: 0.3818
Total trained pairs (M):	781.52 ;	loss: 0.3806
Total trained pairs (M):	781.98 ;	loss: 0.3842
Total trained pairs (M):	782.44 ;	loss: 0.3830
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Total trained pairs (M):	783.80 ;	loss: 0.3843
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Total trained pairs (M):	784.70 ;	loss: 0.3846
Total trained pairs (M):	785.14 ;	loss: 0.3872
Total trained pairs (M):	785.58 ;	loss: 0.3889
Total trained pairs (M):	786.02 ;	loss: 0.3876
Total trained pairs (M):	786.45 ;	loss: 0.3884
Total trained pairs (M):	786.87 ;	loss: 0.3913
Total trained pairs (M):	787.29 ;	loss: 0.3918
Total trained pairs (M):	787.70 ;	loss: 0.3924
Total trained pairs (M):	788.11 ;	loss: 0.3910
Total trained pairs (M):	788.51 ;	loss: 0.3904
Total trained pairs (M):	788.92 ;	loss: 0.3938
Total trained pairs (M):	789.32 ;	loss: 0.3919
Total trained pairs (M):	789.73 ;	loss: 0.3912
Total trained pairs (M):	790.13 ;	loss: 0.3892
Total trained pairs (M):	790.54 ;	loss: 0.3898
Total trained pairs (M):	790.94 ;	loss: 0.3866
Total trained pairs (M):	791.35 ;	loss: 0.3892
Total trained pairs (M):	791.75 ;	loss: 0.3910
Total trained pairs (M):	792.16 ;	loss: 0.3901
Total trained pairs (M):	792.57 ;	loss: 0.3894
Total trained pairs (M):	792.98 ;	loss: 0.3881

Total trained pairs (M):	793.40 ;	loss: 0.3869
Total trained pairs (M):	793.81 ;	loss: 0.3934
Total trained pairs (M):	794.22 ;	loss: 0.3936
Total trained pairs (M):	794.63 ;	loss: 0.3993
Total trained pairs (M):	795.05 ;	loss: 0.4001
Total trained pairs (M):	795.47 ;	loss: 0.3982
Total trained pairs (M):	795.89 ;	loss: 0.3990
Total trained pairs (M):	796.31 ;	loss: 0.4014
Total trained pairs (M):	796.74 ;	loss: 0.4036
Total trained pairs (M):	797.16 ;	loss: 0.4054
Total trained pairs (M):	797.58 ;	loss: 0.4045
Total trained pairs (M):	798.01 ;	loss: 0.4033
Total trained pairs (M):	798.44 ;	loss: 0.4049
Total trained pairs (M):	798.87 ;	loss: 0.4041
Total trained pairs (M):	799.31 ;	loss: 0.4064
Total trained pairs (M):	799.76 ;	loss: 0.4105
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Total trained pairs (M):	800.66 ;	loss: 0.4065
Total trained pairs (M):	801.10 ;	loss: 0.4097
Total trained pairs (M):	801.54 ;	loss: 0.4078
Total trained pairs (M):	801.99 ;	loss: 0.4197
Total trained pairs (M):	802.44 ;	loss: 0.4236
Total trained pairs (M):	802.89 ;	loss: 0.4239
Total trained pairs (M):	803.34 ;	loss: 0.4222
Total trained pairs (M):	803.78 ;	loss: 0.4230
Total trained pairs (M):	804.21 ;	loss: 0.4228
Total trained pairs (M):	804.65 ;	loss: 0.4254
Total trained pairs (M):	805.08 ;	loss: 0.4254
Total trained pairs (M):	805.51 ;	loss: 0.4246
Total trained pairs (M):	805.93 ;	loss: 0.4250
Total trained pairs (M):	806.35 ;	loss: 0.4279
Total trained pairs (M):	806.79 ;	loss: 0.4277
Total trained pairs (M):	807.23 ;	loss: 0.4357
Total trained pairs (M):	807.67 ;	loss: 0.4365
Total trained pairs (M):	808.12 ;	loss: 0.4363
Total trained pairs (M):	808.57 ;	loss: 0.4352
Epoch 4 =====		
Total trained pairs (M):	809.08 ;	loss: 0.5742
Total trained pairs (M):	809.61 ;	loss: 0.5646
Total trained pairs (M):	810.13 ;	loss: 0.5525
Total trained pairs (M):	810.65 ;	loss: 0.5451
Total trained pairs (M):	811.16 ;	loss: 0.5381
Total trained pairs (M):	811.67 ;	loss: 0.5322
Total trained pairs (M):	812.19 ;	loss: 0.5281
Total trained pairs (M):	812.69 ;	loss: 0.5241
Total trained pairs (M):	813.19 ;	loss: 0.5179
Total trained pairs (M):	813.69 ;	loss: 0.5109
Total trained pairs (M):	814.19 ;	loss: 0.5075
Total trained pairs (M):	814.69 ;	loss: 0.5041
Total trained pairs (M):	815.19 ;	loss: 0.5005
Total trained pairs (M):	815.69 ;	loss: 0.4979
Total trained pairs (M):	816.19 ;	loss: 0.4923
Total trained pairs (M):	816.67 ;	loss: 0.4906
Total trained pairs (M):	817.15 ;	loss: 0.4885
Total trained pairs (M):	817.63 ;	loss: 0.4846
Total trained pairs (M):	818.11 ;	loss: 0.4821
Total trained pairs (M):	818.59 ;	loss: 0.4780
Total trained pairs (M):	819.07 ;	loss: 0.4733
Total trained pairs (M):	819.55 ;	loss: 0.4714

Total trained pairs (M):	820.02 ;	loss: 0.4689
Total trained pairs (M):	820.50 ;	loss: 0.4674
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Total trained pairs (M):	821.95 ;	loss: 0.4557
Total trained pairs (M):	822.41 ;	loss: 0.4472
Total trained pairs (M):	822.88 ;	loss: 0.4453
Total trained pairs (M):	823.35 ;	loss: 0.4432
Total trained pairs (M):	823.83 ;	loss: 0.4412
Total trained pairs (M):	824.30 ;	loss: 0.4396
Total trained pairs (M):	824.78 ;	loss: 0.4388
Total trained pairs (M):	825.27 ;	loss: 0.4360
Total trained pairs (M):	825.76 ;	loss: 0.4362
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Total trained pairs (M):	826.72 ;	loss: 0.4311
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Total trained pairs (M):	827.67 ;	loss: 0.4263
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Total trained pairs (M):	828.63 ;	loss: 0.4217
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Total trained pairs (M):	829.58 ;	loss: 0.4134
Total trained pairs (M):	830.06 ;	loss: 0.4113
Total trained pairs (M):	830.55 ;	loss: 0.4082
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Total trained pairs (M):	831.51 ;	loss: 0.4046
Total trained pairs (M):	831.99 ;	loss: 0.4038
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Total trained pairs (M):	833.44 ;	loss: 0.3983
Total trained pairs (M):	833.93 ;	loss: 0.3966
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Total trained pairs (M):	834.91 ;	loss: 0.3924
Total trained pairs (M):	835.40 ;	loss: 0.3911
Total trained pairs (M):	835.89 ;	loss: 0.3878
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Total trained pairs (M):	836.94 ;	loss: 0.3908
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Total trained pairs (M):	841.98 ;	loss: 0.3734
Total trained pairs (M):	842.47 ;	loss: 0.3722
Total trained pairs (M):	842.96 ;	loss: 0.3726
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Total trained pairs (M):	843.94 ;	loss: 0.3744
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Total trained pairs (M):	844.93 ;	loss: 0.3704
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Total trained pairs (M):	845.92 ;	loss: 0.3699
Total trained pairs (M):	846.43 ;	loss: 0.3723
Total trained pairs (M):	846.92 ;	loss: 0.3721
Total trained pairs (M):	847.41 ;	loss: 0.3720
Total trained pairs (M):	847.92 ;	loss: 0.3743
Total trained pairs (M):	848.43 ;	loss: 0.3726

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Total trained pairs (M):	857.04 ;	loss: 0.3707
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Total trained pairs (M):	864.80 ;	loss: 0.3650
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Total trained pairs (M):	871.60 ;	loss: 0.3585
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Total trained pairs (M):	879.41 ;	loss: 0.3528

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Total trained pairs (M):	1009.81 ;	loss: 0.4259
Total trained pairs (M):	1010.26 ;	loss: 0.4277
Total trained pairs (M):	1010.71 ;	loss: 0.4261
Epoch 5 =====		
Total trained pairs (M):	1011.23 ;	loss: 0.5651
Total trained pairs (M):	1011.75 ;	loss: 0.5563
Total trained pairs (M):	1012.27 ;	loss: 0.5442
Total trained pairs (M):	1012.80 ;	loss: 0.5358
Total trained pairs (M):	1013.31 ;	loss: 0.5285
Total trained pairs (M):	1013.82 ;	loss: 0.5218
Total trained pairs (M):	1014.33 ;	loss: 0.5178
Total trained pairs (M):	1014.83 ;	loss: 0.5129
Total trained pairs (M):	1015.33 ;	loss: 0.5071
Total trained pairs (M):	1015.83 ;	loss: 0.4996

Total trained pairs (M):	1016.33 ;	loss: 0.4958
Total trained pairs (M):	1016.83 ;	loss: 0.4919
Total trained pairs (M):	1017.33 ;	loss: 0.4878
Total trained pairs (M):	1017.83 ;	loss: 0.4833
Total trained pairs (M):	1018.33 ;	loss: 0.4781
Total trained pairs (M):	1018.81 ;	loss: 0.4768
Total trained pairs (M):	1019.29 ;	loss: 0.4740
Total trained pairs (M):	1019.77 ;	loss: 0.4696
Total trained pairs (M):	1020.26 ;	loss: 0.4667
Total trained pairs (M):	1020.73 ;	loss: 0.4625
Total trained pairs (M):	1021.21 ;	loss: 0.4595
Total trained pairs (M):	1021.69 ;	loss: 0.4573
Total trained pairs (M):	1022.17 ;	loss: 0.4542
Total trained pairs (M):	1022.64 ;	loss: 0.4500
Total trained pairs (M):	1023.12 ;	loss: 0.4497
Total trained pairs (M):	1023.61 ;	loss: 0.4445
Total trained pairs (M):	1024.09 ;	loss: 0.4406
Total trained pairs (M):	1024.56 ;	loss: 0.4305
Total trained pairs (M):	1025.03 ;	loss: 0.4297
Total trained pairs (M):	1025.50 ;	loss: 0.4259
Total trained pairs (M):	1025.97 ;	loss: 0.4239
Total trained pairs (M):	1026.44 ;	loss: 0.4233
Total trained pairs (M):	1026.92 ;	loss: 0.4201
Total trained pairs (M):	1027.41 ;	loss: 0.4184
Total trained pairs (M):	1027.90 ;	loss: 0.4188
Total trained pairs (M):	1028.38 ;	loss: 0.4160
Total trained pairs (M):	1028.86 ;	loss: 0.4135
Total trained pairs (M):	1029.34 ;	loss: 0.4109
Total trained pairs (M):	1029.81 ;	loss: 0.4087
Total trained pairs (M):	1030.29 ;	loss: 0.4071
Total trained pairs (M):	1030.77 ;	loss: 0.4046
Total trained pairs (M):	1031.25 ;	loss: 0.3966
Total trained pairs (M):	1031.72 ;	loss: 0.3947
Total trained pairs (M):	1032.20 ;	loss: 0.3921
Total trained pairs (M):	1032.69 ;	loss: 0.3894
Total trained pairs (M):	1033.17 ;	loss: 0.3881
Total trained pairs (M):	1033.66 ;	loss: 0.3860
Total trained pairs (M):	1034.14 ;	loss: 0.3843
Total trained pairs (M):	1034.62 ;	loss: 0.3824
Total trained pairs (M):	1035.10 ;	loss: 0.3807
Total trained pairs (M):	1035.58 ;	loss: 0.3790
Total trained pairs (M):	1036.07 ;	loss: 0.3786
Total trained pairs (M):	1036.56 ;	loss: 0.3761
Total trained pairs (M):	1037.05 ;	loss: 0.3741
Total trained pairs (M):	1037.54 ;	loss: 0.3718
Total trained pairs (M):	1038.03 ;	loss: 0.3700
Total trained pairs (M):	1038.55 ;	loss: 0.3718
Total trained pairs (M):	1039.08 ;	loss: 0.3732
Total trained pairs (M):	1039.60 ;	loss: 0.3717
Total trained pairs (M):	1040.13 ;	loss: 0.3691
Total trained pairs (M):	1040.64 ;	loss: 0.3678
Total trained pairs (M):	1041.15 ;	loss: 0.3680
Total trained pairs (M):	1041.66 ;	loss: 0.3655
Total trained pairs (M):	1042.17 ;	loss: 0.3634
Total trained pairs (M):	1042.66 ;	loss: 0.3611
Total trained pairs (M):	1043.15 ;	loss: 0.3594
Total trained pairs (M):	1043.63 ;	loss: 0.3556
Total trained pairs (M):	1044.12 ;	loss: 0.3541
Total trained pairs (M):	1044.61 ;	loss: 0.3528

Total trained pairs (M):	1045.10 ;	loss: 0.3528
Total trained pairs (M):	1045.59 ;	loss: 0.3532
Total trained pairs (M):	1046.09 ;	loss: 0.3542
Total trained pairs (M):	1046.58 ;	loss: 0.3527
Total trained pairs (M):	1047.07 ;	loss: 0.3533
Total trained pairs (M):	1047.57 ;	loss: 0.3496
Total trained pairs (M):	1048.07 ;	loss: 0.3522
Total trained pairs (M):	1048.57 ;	loss: 0.3554
Total trained pairs (M):	1049.06 ;	loss: 0.3525
Total trained pairs (M):	1049.55 ;	loss: 0.3539
Total trained pairs (M):	1050.06 ;	loss: 0.3550
Total trained pairs (M):	1050.57 ;	loss: 0.3549
Total trained pairs (M):	1051.09 ;	loss: 0.3541
Total trained pairs (M):	1051.61 ;	loss: 0.3547
Total trained pairs (M):	1052.13 ;	loss: 0.3531
Total trained pairs (M):	1052.64 ;	loss: 0.3522
Total trained pairs (M):	1053.15 ;	loss: 0.3511
Total trained pairs (M):	1053.69 ;	loss: 0.3544
Total trained pairs (M):	1054.22 ;	loss: 0.3563
Total trained pairs (M):	1054.76 ;	loss: 0.3559
Total trained pairs (M):	1055.30 ;	loss: 0.3548
Total trained pairs (M):	1055.84 ;	loss: 0.3525
Total trained pairs (M):	1056.40 ;	loss: 0.3543
Total trained pairs (M):	1056.95 ;	loss: 0.3524
Total trained pairs (M):	1057.51 ;	loss: 0.3520
Total trained pairs (M):	1058.06 ;	loss: 0.3509
Total trained pairs (M):	1058.62 ;	loss: 0.3505
Total trained pairs (M):	1059.18 ;	loss: 0.3514
Total trained pairs (M):	1059.73 ;	loss: 0.3507
Total trained pairs (M):	1060.29 ;	loss: 0.3482
Total trained pairs (M):	1060.81 ;	loss: 0.3506
Total trained pairs (M):	1061.32 ;	loss: 0.3492
Total trained pairs (M):	1061.84 ;	loss: 0.3515
Total trained pairs (M):	1062.35 ;	loss: 0.3519
Total trained pairs (M):	1062.86 ;	loss: 0.3497
Total trained pairs (M):	1063.38 ;	loss: 0.3498
Total trained pairs (M):	1063.89 ;	loss: 0.3485
Total trained pairs (M):	1064.40 ;	loss: 0.3476
Total trained pairs (M):	1064.91 ;	loss: 0.3454
Total trained pairs (M):	1065.42 ;	loss: 0.3476
Total trained pairs (M):	1065.92 ;	loss: 0.3462
Total trained pairs (M):	1066.44 ;	loss: 0.3474
Total trained pairs (M):	1066.94 ;	loss: 0.3475
Total trained pairs (M):	1067.45 ;	loss: 0.3441
Total trained pairs (M):	1067.97 ;	loss: 0.3463
Total trained pairs (M):	1068.48 ;	loss: 0.3450
Total trained pairs (M):	1068.99 ;	loss: 0.3459
Total trained pairs (M):	1069.52 ;	loss: 0.3467
Total trained pairs (M):	1070.04 ;	loss: 0.3457
Total trained pairs (M):	1070.56 ;	loss: 0.3434
Total trained pairs (M):	1071.09 ;	loss: 0.3462
Total trained pairs (M):	1071.62 ;	loss: 0.3452
Total trained pairs (M):	1072.15 ;	loss: 0.3437
Total trained pairs (M):	1072.68 ;	loss: 0.3411
Total trained pairs (M):	1073.21 ;	loss: 0.3416
Total trained pairs (M):	1073.74 ;	loss: 0.3403
Total trained pairs (M):	1074.26 ;	loss: 0.3426
Total trained pairs (M):	1074.79 ;	loss: 0.3424
Total trained pairs (M):	1075.31 ;	loss: 0.3401

Total trained pairs (M):	1075.83 ;	loss: 0.3391
Total trained pairs (M):	1076.35 ;	loss: 0.3409
Total trained pairs (M):	1076.88 ;	loss: 0.3403
Total trained pairs (M):	1077.40 ;	loss: 0.3402
Total trained pairs (M):	1077.92 ;	loss: 0.3380
Total trained pairs (M):	1078.43 ;	loss: 0.3390
Total trained pairs (M):	1078.95 ;	loss: 0.3388
Total trained pairs (M):	1079.46 ;	loss: 0.3362
Total trained pairs (M):	1079.97 ;	loss: 0.3345
Total trained pairs (M):	1080.50 ;	loss: 0.3369
Total trained pairs (M):	1081.02 ;	loss: 0.3361
Total trained pairs (M):	1081.55 ;	loss: 0.3355
Total trained pairs (M):	1082.08 ;	loss: 0.3368
Total trained pairs (M):	1082.60 ;	loss: 0.3365
Total trained pairs (M):	1083.14 ;	loss: 0.3410
Total trained pairs (M):	1083.67 ;	loss: 0.3409
Total trained pairs (M):	1084.20 ;	loss: 0.3404
Total trained pairs (M):	1084.74 ;	loss: 0.3392
Total trained pairs (M):	1085.27 ;	loss: 0.3398
Total trained pairs (M):	1085.81 ;	loss: 0.3377
Total trained pairs (M):	1086.34 ;	loss: 0.3364
Total trained pairs (M):	1086.88 ;	loss: 0.3336
Total trained pairs (M):	1087.41 ;	loss: 0.3343
Total trained pairs (M):	1087.93 ;	loss: 0.3336
Total trained pairs (M):	1088.46 ;	loss: 0.3332
Total trained pairs (M):	1088.99 ;	loss: 0.3309
Total trained pairs (M):	1089.53 ;	loss: 0.3306
Total trained pairs (M):	1090.05 ;	loss: 0.3314
Total trained pairs (M):	1090.55 ;	loss: 0.3340
Total trained pairs (M):	1091.03 ;	loss: 0.3336
Total trained pairs (M):	1091.52 ;	loss: 0.3315
Total trained pairs (M):	1092.01 ;	loss: 0.3310
Total trained pairs (M):	1092.50 ;	loss: 0.3302
Total trained pairs (M):	1092.98 ;	loss: 0.3288
Total trained pairs (M):	1093.48 ;	loss: 0.3288
Total trained pairs (M):	1093.99 ;	loss: 0.3295
Total trained pairs (M):	1094.50 ;	loss: 0.3296
Total trained pairs (M):	1095.02 ;	loss: 0.3291
Total trained pairs (M):	1095.54 ;	loss: 0.3286
Total trained pairs (M):	1096.06 ;	loss: 0.3279
Total trained pairs (M):	1096.57 ;	loss: 0.3265
Total trained pairs (M):	1097.09 ;	loss: 0.3264
Total trained pairs (M):	1097.60 ;	loss: 0.3242
Total trained pairs (M):	1098.11 ;	loss: 0.3267
Total trained pairs (M):	1098.61 ;	loss: 0.3256
Total trained pairs (M):	1099.12 ;	loss: 0.3238
Total trained pairs (M):	1099.62 ;	loss: 0.3231
Total trained pairs (M):	1100.11 ;	loss: 0.3234
Total trained pairs (M):	1100.59 ;	loss: 0.3234
Total trained pairs (M):	1101.07 ;	loss: 0.3222
Total trained pairs (M):	1101.55 ;	loss: 0.3219
Total trained pairs (M):	1102.01 ;	loss: 0.3238
Total trained pairs (M):	1102.47 ;	loss: 0.3225
Total trained pairs (M):	1102.92 ;	loss: 0.3218
Total trained pairs (M):	1103.37 ;	loss: 0.3225
Total trained pairs (M):	1103.81 ;	loss: 0.3200
Total trained pairs (M):	1104.25 ;	loss: 0.3207
Total trained pairs (M):	1104.69 ;	loss: 0.3203
Total trained pairs (M):	1105.12 ;	loss: 0.3212

Total trained pairs (M):	1105.54 ;	loss: 0.3232
Total trained pairs (M):	1105.97 ;	loss: 0.3216
Total trained pairs (M):	1106.38 ;	loss: 0.3213
Total trained pairs (M):	1106.81 ;	loss: 0.3278
Total trained pairs (M):	1107.23 ;	loss: 0.3271
Total trained pairs (M):	1107.65 ;	loss: 0.3313
Total trained pairs (M):	1108.07 ;	loss: 0.3295
Total trained pairs (M):	1108.49 ;	loss: 0.3293
Total trained pairs (M):	1108.89 ;	loss: 0.3320
Total trained pairs (M):	1109.30 ;	loss: 0.3338
Total trained pairs (M):	1109.73 ;	loss: 0.3357
Total trained pairs (M):	1110.17 ;	loss: 0.3410
Total trained pairs (M):	1110.62 ;	loss: 0.3450
Total trained pairs (M):	1111.08 ;	loss: 0.3447
Total trained pairs (M):	1111.53 ;	loss: 0.3447
Total trained pairs (M):	1111.98 ;	loss: 0.3443
Total trained pairs (M):	1112.43 ;	loss: 0.3420
Total trained pairs (M):	1112.87 ;	loss: 0.3415
Total trained pairs (M):	1113.31 ;	loss: 0.3418
Total trained pairs (M):	1113.76 ;	loss: 0.3401
Total trained pairs (M):	1114.20 ;	loss: 0.3394
Total trained pairs (M):	1114.65 ;	loss: 0.3394
Total trained pairs (M):	1115.10 ;	loss: 0.3397
Total trained pairs (M):	1115.55 ;	loss: 0.3401
Total trained pairs (M):	1116.00 ;	loss: 0.3395
Total trained pairs (M):	1116.45 ;	loss: 0.3381
Total trained pairs (M):	1116.90 ;	loss: 0.3400
Total trained pairs (M):	1117.35 ;	loss: 0.3395
Total trained pairs (M):	1117.79 ;	loss: 0.3361
Total trained pairs (M):	1118.23 ;	loss: 0.3382
Total trained pairs (M):	1118.67 ;	loss: 0.3376
Total trained pairs (M):	1119.11 ;	loss: 0.3404
Total trained pairs (M):	1119.55 ;	loss: 0.3396
Total trained pairs (M):	1119.99 ;	loss: 0.3391
Total trained pairs (M):	1120.43 ;	loss: 0.3360
Total trained pairs (M):	1120.87 ;	loss: 0.3332
Total trained pairs (M):	1121.31 ;	loss: 0.3343
Total trained pairs (M):	1121.75 ;	loss: 0.3384
Total trained pairs (M):	1122.19 ;	loss: 0.3371
Total trained pairs (M):	1122.64 ;	loss: 0.3380
Total trained pairs (M):	1123.08 ;	loss: 0.3343
Total trained pairs (M):	1123.53 ;	loss: 0.3335
Total trained pairs (M):	1123.97 ;	loss: 0.3376
Total trained pairs (M):	1124.42 ;	loss: 0.3362
Total trained pairs (M):	1124.86 ;	loss: 0.3364
Total trained pairs (M):	1125.32 ;	loss: 0.3370
Total trained pairs (M):	1125.77 ;	loss: 0.3404
Total trained pairs (M):	1126.22 ;	loss: 0.3399
Total trained pairs (M):	1126.69 ;	loss: 0.3406
Total trained pairs (M):	1127.15 ;	loss: 0.3406
Total trained pairs (M):	1127.61 ;	loss: 0.3414
Total trained pairs (M):	1128.07 ;	loss: 0.3400
Total trained pairs (M):	1128.53 ;	loss: 0.3394
Total trained pairs (M):	1128.98 ;	loss: 0.3402
Total trained pairs (M):	1129.43 ;	loss: 0.3379
Total trained pairs (M):	1129.87 ;	loss: 0.3417
Total trained pairs (M):	1130.31 ;	loss: 0.3434
Total trained pairs (M):	1130.74 ;	loss: 0.3425
Total trained pairs (M):	1131.18 ;	loss: 0.3403

Total trained pairs (M):	1131.61 ;	loss: 0.3403
Total trained pairs (M):	1132.05 ;	loss: 0.3411
Total trained pairs (M):	1132.49 ;	loss: 0.3399
Total trained pairs (M):	1132.96 ;	loss: 0.3543
Total trained pairs (M):	1133.44 ;	loss: 0.3524
Total trained pairs (M):	1133.91 ;	loss: 0.3517
Total trained pairs (M):	1134.38 ;	loss: 0.3512
Total trained pairs (M):	1134.86 ;	loss: 0.3522
Total trained pairs (M):	1135.34 ;	loss: 0.3505
Total trained pairs (M):	1135.82 ;	loss: 0.3504
Total trained pairs (M):	1136.29 ;	loss: 0.3490
Total trained pairs (M):	1136.76 ;	loss: 0.3471
Total trained pairs (M):	1137.23 ;	loss: 0.3474
Total trained pairs (M):	1137.71 ;	loss: 0.3452
Total trained pairs (M):	1138.19 ;	loss: 0.3444
Total trained pairs (M):	1138.67 ;	loss: 0.3447
Total trained pairs (M):	1139.14 ;	loss: 0.3458
Total trained pairs (M):	1139.60 ;	loss: 0.3479
Total trained pairs (M):	1140.05 ;	loss: 0.3446
Total trained pairs (M):	1140.52 ;	loss: 0.3430
Total trained pairs (M):	1140.98 ;	loss: 0.3459
Total trained pairs (M):	1141.44 ;	loss: 0.3464
Total trained pairs (M):	1141.91 ;	loss: 0.3454
Total trained pairs (M):	1142.39 ;	loss: 0.3438
Total trained pairs (M):	1142.87 ;	loss: 0.3440
Total trained pairs (M):	1143.34 ;	loss: 0.3430
Total trained pairs (M):	1143.84 ;	loss: 0.3430
Total trained pairs (M):	1144.33 ;	loss: 0.3438
Total trained pairs (M):	1144.83 ;	loss: 0.3445
Total trained pairs (M):	1145.34 ;	loss: 0.3416
Total trained pairs (M):	1145.85 ;	loss: 0.3442
Total trained pairs (M):	1146.36 ;	loss: 0.3438
Total trained pairs (M):	1146.88 ;	loss: 0.3428
Total trained pairs (M):	1147.39 ;	loss: 0.3412
Total trained pairs (M):	1147.90 ;	loss: 0.3409
Total trained pairs (M):	1148.41 ;	loss: 0.3397
Total trained pairs (M):	1148.92 ;	loss: 0.3375
Total trained pairs (M):	1149.43 ;	loss: 0.3373
Total trained pairs (M):	1149.95 ;	loss: 0.3362
Total trained pairs (M):	1150.47 ;	loss: 0.3343
Total trained pairs (M):	1150.99 ;	loss: 0.3335
Total trained pairs (M):	1151.49 ;	loss: 0.3334
Total trained pairs (M):	1152.00 ;	loss: 0.3332
Total trained pairs (M):	1152.51 ;	loss: 0.3342
Total trained pairs (M):	1153.01 ;	loss: 0.3348
Total trained pairs (M):	1153.52 ;	loss: 0.3326
Total trained pairs (M):	1154.01 ;	loss: 0.3339
Total trained pairs (M):	1154.50 ;	loss: 0.3329
Total trained pairs (M):	1155.00 ;	loss: 0.3318
Total trained pairs (M):	1155.50 ;	loss: 0.3318
Total trained pairs (M):	1155.97 ;	loss: 0.3346
Total trained pairs (M):	1156.46 ;	loss: 0.3396
Total trained pairs (M):	1156.92 ;	loss: 0.3406
Total trained pairs (M):	1157.38 ;	loss: 0.3410
Total trained pairs (M):	1157.82 ;	loss: 0.3394
Total trained pairs (M):	1158.27 ;	loss: 0.3383
Total trained pairs (M):	1158.72 ;	loss: 0.3354
Total trained pairs (M):	1159.17 ;	loss: 0.3364
Total trained pairs (M):	1159.63 ;	loss: 0.3361

Total trained pairs (M):	1160.08 ;	loss: 0.3338
Total trained pairs (M):	1160.55 ;	loss: 0.3359
Total trained pairs (M):	1161.00 ;	loss: 0.3347
Total trained pairs (M):	1161.47 ;	loss: 0.3349
Total trained pairs (M):	1161.93 ;	loss: 0.3361
Total trained pairs (M):	1162.40 ;	loss: 0.3358
Total trained pairs (M):	1162.85 ;	loss: 0.3345
Total trained pairs (M):	1163.32 ;	loss: 0.3354
Total trained pairs (M):	1163.79 ;	loss: 0.3358
Total trained pairs (M):	1164.26 ;	loss: 0.3383
Total trained pairs (M):	1164.73 ;	loss: 0.3375
Total trained pairs (M):	1165.20 ;	loss: 0.3380
Total trained pairs (M):	1165.68 ;	loss: 0.3370
Total trained pairs (M):	1166.15 ;	loss: 0.3361
Total trained pairs (M):	1166.63 ;	loss: 0.3365
Total trained pairs (M):	1167.10 ;	loss: 0.3367
Total trained pairs (M):	1167.58 ;	loss: 0.3352
Total trained pairs (M):	1168.06 ;	loss: 0.3338
Total trained pairs (M):	1168.53 ;	loss: 0.3325
Total trained pairs (M):	1169.01 ;	loss: 0.3363
Total trained pairs (M):	1169.48 ;	loss: 0.3355
Total trained pairs (M):	1169.96 ;	loss: 0.3338
Total trained pairs (M):	1170.43 ;	loss: 0.3347
Total trained pairs (M):	1170.90 ;	loss: 0.3337
Total trained pairs (M):	1171.38 ;	loss: 0.3335
Total trained pairs (M):	1171.86 ;	loss: 0.3346
Total trained pairs (M):	1172.34 ;	loss: 0.3345
Total trained pairs (M):	1172.81 ;	loss: 0.3336
Total trained pairs (M):	1173.27 ;	loss: 0.3346
Total trained pairs (M):	1173.74 ;	loss: 0.3341
Total trained pairs (M):	1174.21 ;	loss: 0.3420
Total trained pairs (M):	1174.68 ;	loss: 0.3428
Total trained pairs (M):	1175.15 ;	loss: 0.3409
Total trained pairs (M):	1175.62 ;	loss: 0.3398
Total trained pairs (M):	1176.09 ;	loss: 0.3400
Total trained pairs (M):	1176.56 ;	loss: 0.3409
Total trained pairs (M):	1177.03 ;	loss: 0.3411
Total trained pairs (M):	1177.50 ;	loss: 0.3414
Total trained pairs (M):	1177.97 ;	loss: 0.3399
Total trained pairs (M):	1178.44 ;	loss: 0.3402
Total trained pairs (M):	1178.91 ;	loss: 0.3419
Total trained pairs (M):	1179.39 ;	loss: 0.3423
Total trained pairs (M):	1179.87 ;	loss: 0.3440
Total trained pairs (M):	1180.35 ;	loss: 0.3425
Total trained pairs (M):	1180.79 ;	loss: 0.3465
Total trained pairs (M):	1181.25 ;	loss: 0.3473
Total trained pairs (M):	1181.71 ;	loss: 0.3529
Total trained pairs (M):	1182.17 ;	loss: 0.3523
Total trained pairs (M):	1182.62 ;	loss: 0.3523
Total trained pairs (M):	1183.07 ;	loss: 0.3520
Total trained pairs (M):	1183.52 ;	loss: 0.3506
Total trained pairs (M):	1183.98 ;	loss: 0.3484
Total trained pairs (M):	1184.43 ;	loss: 0.3463
Total trained pairs (M):	1184.89 ;	loss: 0.3463
Total trained pairs (M):	1185.35 ;	loss: 0.3461
Total trained pairs (M):	1185.80 ;	loss: 0.3445
Total trained pairs (M):	1186.26 ;	loss: 0.3477
Total trained pairs (M):	1186.72 ;	loss: 0.3482
Total trained pairs (M):	1187.18 ;	loss: 0.3470

Total trained pairs (M):	1187.64 ;	loss: 0.3462
Total trained pairs (M):	1188.09 ;	loss: 0.3485
Total trained pairs (M):	1188.53 ;	loss: 0.3508
Total trained pairs (M):	1188.98 ;	loss: 0.3493
Total trained pairs (M):	1189.43 ;	loss: 0.3529
Total trained pairs (M):	1189.87 ;	loss: 0.3543
Total trained pairs (M):	1190.30 ;	loss: 0.3549
Total trained pairs (M):	1190.73 ;	loss: 0.3544
Total trained pairs (M):	1191.16 ;	loss: 0.3567
Total trained pairs (M):	1191.58 ;	loss: 0.3560
Total trained pairs (M):	1191.98 ;	loss: 0.3564
Total trained pairs (M):	1192.39 ;	loss: 0.3571
Total trained pairs (M):	1192.80 ;	loss: 0.3576
Total trained pairs (M):	1193.20 ;	loss: 0.3599
Total trained pairs (M):	1193.61 ;	loss: 0.3595
Total trained pairs (M):	1194.01 ;	loss: 0.3580
Total trained pairs (M):	1194.42 ;	loss: 0.3564
Total trained pairs (M):	1194.82 ;	loss: 0.3555
Total trained pairs (M):	1195.23 ;	loss: 0.3535
Total trained pairs (M):	1195.63 ;	loss: 0.3577
Total trained pairs (M):	1196.04 ;	loss: 0.3586
Total trained pairs (M):	1196.45 ;	loss: 0.3576
Total trained pairs (M):	1196.86 ;	loss: 0.3578
Total trained pairs (M):	1197.27 ;	loss: 0.3565
Total trained pairs (M):	1197.68 ;	loss: 0.3566
Total trained pairs (M):	1198.09 ;	loss: 0.3636
Total trained pairs (M):	1198.50 ;	loss: 0.3645
Total trained pairs (M):	1198.92 ;	loss: 0.3704
Total trained pairs (M):	1199.33 ;	loss: 0.3698
Total trained pairs (M):	1199.75 ;	loss: 0.3702
Total trained pairs (M):	1200.17 ;	loss: 0.3696
Total trained pairs (M):	1200.59 ;	loss: 0.3720
Total trained pairs (M):	1201.03 ;	loss: 0.3774
Total trained pairs (M):	1201.44 ;	loss: 0.3785
Total trained pairs (M):	1201.87 ;	loss: 0.3783
Total trained pairs (M):	1202.30 ;	loss: 0.3767
Total trained pairs (M):	1202.72 ;	loss: 0.3776
Total trained pairs (M):	1203.15 ;	loss: 0.3768
Total trained pairs (M):	1203.59 ;	loss: 0.3819
Total trained pairs (M):	1204.05 ;	loss: 0.3871
Total trained pairs (M):	1204.50 ;	loss: 0.3856
Total trained pairs (M):	1204.95 ;	loss: 0.3851
Total trained pairs (M):	1205.39 ;	loss: 0.3854
Total trained pairs (M):	1205.82 ;	loss: 0.3845
Total trained pairs (M):	1206.27 ;	loss: 0.3972
Total trained pairs (M):	1206.72 ;	loss: 0.4039
Total trained pairs (M):	1207.17 ;	loss: 0.4026
Total trained pairs (M):	1207.62 ;	loss: 0.4010
Total trained pairs (M):	1208.06 ;	loss: 0.4027
Total trained pairs (M):	1208.50 ;	loss: 0.4018
Total trained pairs (M):	1208.93 ;	loss: 0.4057
Total trained pairs (M):	1209.36 ;	loss: 0.4065
Total trained pairs (M):	1209.79 ;	loss: 0.4065
Total trained pairs (M):	1210.21 ;	loss: 0.4066
Total trained pairs (M):	1210.64 ;	loss: 0.4075
Total trained pairs (M):	1211.07 ;	loss: 0.4095
Total trained pairs (M):	1211.51 ;	loss: 0.4186
Total trained pairs (M):	1211.95 ;	loss: 0.4188
Total trained pairs (M):	1212.40 ;	loss: 0.4204

Total trained pairs (M):	1212.85 ;	loss: 0.4199
Epoch 6 =====		
Total trained pairs (M):	1213.37 ;	loss: 0.5615
Total trained pairs (M):	1213.89 ;	loss: 0.5527
Total trained pairs (M):	1214.42 ;	loss: 0.5388
Total trained pairs (M):	1214.94 ;	loss: 0.5305
Total trained pairs (M):	1215.45 ;	loss: 0.5229
Total trained pairs (M):	1215.96 ;	loss: 0.5167
Total trained pairs (M):	1216.47 ;	loss: 0.5102
Total trained pairs (M):	1216.98 ;	loss: 0.5049
Total trained pairs (M):	1217.48 ;	loss: 0.4993
Total trained pairs (M):	1217.98 ;	loss: 0.4909
Total trained pairs (M):	1218.48 ;	loss: 0.4877
Total trained pairs (M):	1218.97 ;	loss: 0.4823
Total trained pairs (M):	1219.47 ;	loss: 0.4782
Total trained pairs (M):	1219.98 ;	loss: 0.4745
Total trained pairs (M):	1220.47 ;	loss: 0.4698
Total trained pairs (M):	1220.95 ;	loss: 0.4663
Total trained pairs (M):	1221.43 ;	loss: 0.4626
Total trained pairs (M):	1221.91 ;	loss: 0.4594
Total trained pairs (M):	1222.40 ;	loss: 0.4563
Total trained pairs (M):	1222.88 ;	loss: 0.4532
Total trained pairs (M):	1223.35 ;	loss: 0.4485
Total trained pairs (M):	1223.83 ;	loss: 0.4466
Total trained pairs (M):	1224.31 ;	loss: 0.4430
Total trained pairs (M):	1224.78 ;	loss: 0.4413
Total trained pairs (M):	1225.26 ;	loss: 0.4370
Total trained pairs (M):	1225.75 ;	loss: 0.4328
Total trained pairs (M):	1226.23 ;	loss: 0.4280
Total trained pairs (M):	1226.70 ;	loss: 0.4177
Total trained pairs (M):	1227.17 ;	loss: 0.4180
Total trained pairs (M):	1227.64 ;	loss: 0.4136
Total trained pairs (M):	1228.11 ;	loss: 0.4118
Total trained pairs (M):	1228.59 ;	loss: 0.4096
Total trained pairs (M):	1229.06 ;	loss: 0.4084
Total trained pairs (M):	1229.55 ;	loss: 0.4072
Total trained pairs (M):	1230.04 ;	loss: 0.4051
Total trained pairs (M):	1230.53 ;	loss: 0.4015
Total trained pairs (M):	1231.00 ;	loss: 0.3985
Total trained pairs (M):	1231.48 ;	loss: 0.3973
Total trained pairs (M):	1231.95 ;	loss: 0.3950
Total trained pairs (M):	1232.43 ;	loss: 0.3933
Total trained pairs (M):	1232.91 ;	loss: 0.3906
Total trained pairs (M):	1233.39 ;	loss: 0.3830
Total trained pairs (M):	1233.87 ;	loss: 0.3813
Total trained pairs (M):	1234.35 ;	loss: 0.3783
Total trained pairs (M):	1234.83 ;	loss: 0.3768
Total trained pairs (M):	1235.31 ;	loss: 0.3743
Total trained pairs (M):	1235.80 ;	loss: 0.3716
Total trained pairs (M):	1236.28 ;	loss: 0.3708
Total trained pairs (M):	1236.76 ;	loss: 0.3689
Total trained pairs (M):	1237.24 ;	loss: 0.3664
Total trained pairs (M):	1237.73 ;	loss: 0.3652
Total trained pairs (M):	1238.21 ;	loss: 0.3630
Total trained pairs (M):	1238.70 ;	loss: 0.3621
Total trained pairs (M):	1239.19 ;	loss: 0.3603
Total trained pairs (M):	1239.68 ;	loss: 0.3573
Total trained pairs (M):	1240.17 ;	loss: 0.3555
Total trained pairs (M):	1240.69 ;	loss: 0.3583

Total trained pairs (M):	1241.22 ;	loss: 0.3592
Total trained pairs (M):	1241.75 ;	loss: 0.3572
Total trained pairs (M):	1242.27 ;	loss: 0.3550
Total trained pairs (M):	1242.78 ;	loss: 0.3538
Total trained pairs (M):	1243.29 ;	loss: 0.3534
Total trained pairs (M):	1243.80 ;	loss: 0.3517
Total trained pairs (M):	1244.31 ;	loss: 0.3493
Total trained pairs (M):	1244.81 ;	loss: 0.3472
Total trained pairs (M):	1245.29 ;	loss: 0.3441
Total trained pairs (M):	1245.77 ;	loss: 0.3422
Total trained pairs (M):	1246.26 ;	loss: 0.3399
Total trained pairs (M):	1246.75 ;	loss: 0.3399
Total trained pairs (M):	1247.24 ;	loss: 0.3402
Total trained pairs (M):	1247.73 ;	loss: 0.3380
Total trained pairs (M):	1248.23 ;	loss: 0.3420
Total trained pairs (M):	1248.72 ;	loss: 0.3394
Total trained pairs (M):	1249.22 ;	loss: 0.3381
Total trained pairs (M):	1249.71 ;	loss: 0.3372
Total trained pairs (M):	1250.21 ;	loss: 0.3371
Total trained pairs (M):	1250.71 ;	loss: 0.3403
Total trained pairs (M):	1251.20 ;	loss: 0.3385
Total trained pairs (M):	1251.70 ;	loss: 0.3395
Total trained pairs (M):	1252.20 ;	loss: 0.3402
Total trained pairs (M):	1252.71 ;	loss: 0.3399
Total trained pairs (M):	1253.23 ;	loss: 0.3408
Total trained pairs (M):	1253.75 ;	loss: 0.3396
Total trained pairs (M):	1254.27 ;	loss: 0.3391
Total trained pairs (M):	1254.79 ;	loss: 0.3376
Total trained pairs (M):	1255.30 ;	loss: 0.3360
Total trained pairs (M):	1255.83 ;	loss: 0.3418
Total trained pairs (M):	1256.37 ;	loss: 0.3419
Total trained pairs (M):	1256.90 ;	loss: 0.3412
Total trained pairs (M):	1257.44 ;	loss: 0.3407
Total trained pairs (M):	1257.99 ;	loss: 0.3402
Total trained pairs (M):	1258.54 ;	loss: 0.3401
Total trained pairs (M):	1259.09 ;	loss: 0.3383
Total trained pairs (M):	1259.65 ;	loss: 0.3374
Total trained pairs (M):	1260.20 ;	loss: 0.3370
Total trained pairs (M):	1260.76 ;	loss: 0.3379
Total trained pairs (M):	1261.32 ;	loss: 0.3373
Total trained pairs (M):	1261.87 ;	loss: 0.3357
Total trained pairs (M):	1262.43 ;	loss: 0.3356
Total trained pairs (M):	1262.95 ;	loss: 0.3364
Total trained pairs (M):	1263.46 ;	loss: 0.3343
Total trained pairs (M):	1263.98 ;	loss: 0.3369
Total trained pairs (M):	1264.49 ;	loss: 0.3382
Total trained pairs (M):	1265.01 ;	loss: 0.3363
Total trained pairs (M):	1265.52 ;	loss: 0.3353
Total trained pairs (M):	1266.04 ;	loss: 0.3351
Total trained pairs (M):	1266.54 ;	loss: 0.3339
Total trained pairs (M):	1267.05 ;	loss: 0.3337
Total trained pairs (M):	1267.56 ;	loss: 0.3334
Total trained pairs (M):	1268.07 ;	loss: 0.3320
Total trained pairs (M):	1268.58 ;	loss: 0.3333
Total trained pairs (M):	1269.09 ;	loss: 0.3333
Total trained pairs (M):	1269.59 ;	loss: 0.3315
Total trained pairs (M):	1270.11 ;	loss: 0.3333
Total trained pairs (M):	1270.62 ;	loss: 0.3317
Total trained pairs (M):	1271.14 ;	loss: 0.3320

Total trained pairs (M):	1271.66 ;	loss: 0.3321
Total trained pairs (M):	1272.18 ;	loss: 0.3319
Total trained pairs (M):	1272.70 ;	loss: 0.3310
Total trained pairs (M):	1273.23 ;	loss: 0.3328
Total trained pairs (M):	1273.76 ;	loss: 0.3315
Total trained pairs (M):	1274.29 ;	loss: 0.3287
Total trained pairs (M):	1274.82 ;	loss: 0.3274
Total trained pairs (M):	1275.35 ;	loss: 0.3261
Total trained pairs (M):	1275.88 ;	loss: 0.3271
Total trained pairs (M):	1276.41 ;	loss: 0.3288
Total trained pairs (M):	1276.93 ;	loss: 0.3280
Total trained pairs (M):	1277.45 ;	loss: 0.3269
Total trained pairs (M):	1277.97 ;	loss: 0.3258
Total trained pairs (M):	1278.50 ;	loss: 0.3278
Total trained pairs (M):	1279.02 ;	loss: 0.3263
Total trained pairs (M):	1279.54 ;	loss: 0.3269
Total trained pairs (M):	1280.06 ;	loss: 0.3253
Total trained pairs (M):	1280.58 ;	loss: 0.3249
Total trained pairs (M):	1281.09 ;	loss: 0.3251
Total trained pairs (M):	1281.60 ;	loss: 0.3229
Total trained pairs (M):	1282.11 ;	loss: 0.3225
Total trained pairs (M):	1282.64 ;	loss: 0.3238
Total trained pairs (M):	1283.16 ;	loss: 0.3223
Total trained pairs (M):	1283.69 ;	loss: 0.3207
Total trained pairs (M):	1284.22 ;	loss: 0.3227
Total trained pairs (M):	1284.74 ;	loss: 0.3230
Total trained pairs (M):	1285.28 ;	loss: 0.3280
Total trained pairs (M):	1285.81 ;	loss: 0.3277
Total trained pairs (M):	1286.34 ;	loss: 0.3288
Total trained pairs (M):	1286.88 ;	loss: 0.3264
Total trained pairs (M):	1287.41 ;	loss: 0.3260
Total trained pairs (M):	1287.95 ;	loss: 0.3235
Total trained pairs (M):	1288.49 ;	loss: 0.3228
Total trained pairs (M):	1289.02 ;	loss: 0.3203
Total trained pairs (M):	1289.55 ;	loss: 0.3217
Total trained pairs (M):	1290.07 ;	loss: 0.3208
Total trained pairs (M):	1290.61 ;	loss: 0.3197
Total trained pairs (M):	1291.14 ;	loss: 0.3195
Total trained pairs (M):	1291.67 ;	loss: 0.3184
Total trained pairs (M):	1292.19 ;	loss: 0.3196
Total trained pairs (M):	1292.69 ;	loss: 0.3207
Total trained pairs (M):	1293.18 ;	loss: 0.3201
Total trained pairs (M):	1293.66 ;	loss: 0.3185
Total trained pairs (M):	1294.16 ;	loss: 0.3175
Total trained pairs (M):	1294.64 ;	loss: 0.3165
Total trained pairs (M):	1295.13 ;	loss: 0.3163
Total trained pairs (M):	1295.62 ;	loss: 0.3174
Total trained pairs (M):	1296.13 ;	loss: 0.3172
Total trained pairs (M):	1296.65 ;	loss: 0.3166
Total trained pairs (M):	1297.16 ;	loss: 0.3158
Total trained pairs (M):	1297.68 ;	loss: 0.3169
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Total trained pairs (M):	1300.25 ;	loss: 0.3155
Total trained pairs (M):	1300.76 ;	loss: 0.3125
Total trained pairs (M):	1301.26 ;	loss: 0.3132
Total trained pairs (M):	1301.77 ;	loss: 0.3109

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Total trained pairs (M):	1302.73 ;	loss: 0.3110
Total trained pairs (M):	1303.22 ;	loss: 0.3110
Total trained pairs (M):	1303.69 ;	loss: 0.3100
Total trained pairs (M):	1304.15 ;	loss: 0.3123
Total trained pairs (M):	1304.61 ;	loss: 0.3112
Total trained pairs (M):	1305.07 ;	loss: 0.3096
Total trained pairs (M):	1305.51 ;	loss: 0.3104
Total trained pairs (M):	1305.95 ;	loss: 0.3096
Total trained pairs (M):	1306.39 ;	loss: 0.3099
Total trained pairs (M):	1306.84 ;	loss: 0.3089
Total trained pairs (M):	1307.26 ;	loss: 0.3100
Total trained pairs (M):	1307.68 ;	loss: 0.3124
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Total trained pairs (M):	1308.53 ;	loss: 0.3102
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Total trained pairs (M):	1310.63 ;	loss: 0.3181
Total trained pairs (M):	1311.03 ;	loss: 0.3213
Total trained pairs (M):	1311.45 ;	loss: 0.3213
Total trained pairs (M):	1311.87 ;	loss: 0.3232
Total trained pairs (M):	1312.31 ;	loss: 0.3301
Total trained pairs (M):	1312.77 ;	loss: 0.3350
Total trained pairs (M):	1313.22 ;	loss: 0.3339
Total trained pairs (M):	1313.67 ;	loss: 0.3352
Total trained pairs (M):	1314.12 ;	loss: 0.3324
Total trained pairs (M):	1314.57 ;	loss: 0.3321
Total trained pairs (M):	1315.01 ;	loss: 0.3306
Total trained pairs (M):	1315.46 ;	loss: 0.3303
Total trained pairs (M):	1315.90 ;	loss: 0.3296
Total trained pairs (M):	1316.35 ;	loss: 0.3292
Total trained pairs (M):	1316.79 ;	loss: 0.3285
Total trained pairs (M):	1317.24 ;	loss: 0.3297
Total trained pairs (M):	1317.69 ;	loss: 0.3298
Total trained pairs (M):	1318.14 ;	loss: 0.3282
Total trained pairs (M):	1318.59 ;	loss: 0.3278
Total trained pairs (M):	1319.04 ;	loss: 0.3300
Total trained pairs (M):	1319.49 ;	loss: 0.3277
Total trained pairs (M):	1319.93 ;	loss: 0.3270
Total trained pairs (M):	1320.37 ;	loss: 0.3290
Total trained pairs (M):	1320.81 ;	loss: 0.3269
Total trained pairs (M):	1321.25 ;	loss: 0.3298
Total trained pairs (M):	1321.69 ;	loss: 0.3299
Total trained pairs (M):	1322.13 ;	loss: 0.3274
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Total trained pairs (M):	1323.45 ;	loss: 0.3232
Total trained pairs (M):	1323.89 ;	loss: 0.3275
Total trained pairs (M):	1324.34 ;	loss: 0.3267
Total trained pairs (M):	1324.78 ;	loss: 0.3272
Total trained pairs (M):	1325.23 ;	loss: 0.3257
Total trained pairs (M):	1325.67 ;	loss: 0.3243
Total trained pairs (M):	1326.12 ;	loss: 0.3259
Total trained pairs (M):	1326.56 ;	loss: 0.3270
Total trained pairs (M):	1327.00 ;	loss: 0.3270
Total trained pairs (M):	1327.46 ;	loss: 0.3268
Total trained pairs (M):	1327.91 ;	loss: 0.3291

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Total trained pairs (M):	1328.83 ;	loss: 0.3289
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Total trained pairs (M):	1334.19 ;	loss: 0.3301
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Total trained pairs (M):	1335.58 ;	loss: 0.3427
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Total trained pairs (M):	1336.52 ;	loss: 0.3408
Total trained pairs (M):	1337.00 ;	loss: 0.3413
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Total trained pairs (M):	1338.90 ;	loss: 0.3368
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Total trained pairs (M):	1339.85 ;	loss: 0.3365
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Total trained pairs (M):	1341.28 ;	loss: 0.3338
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Total trained pairs (M):	1342.66 ;	loss: 0.3325
Total trained pairs (M):	1343.12 ;	loss: 0.3356
Total trained pairs (M):	1343.59 ;	loss: 0.3366
Total trained pairs (M):	1344.06 ;	loss: 0.3351
Total trained pairs (M):	1344.53 ;	loss: 0.3342
Total trained pairs (M):	1345.01 ;	loss: 0.3342
Total trained pairs (M):	1345.49 ;	loss: 0.3338
Total trained pairs (M):	1345.98 ;	loss: 0.3329
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Total trained pairs (M):	1347.99 ;	loss: 0.3326
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Total trained pairs (M):	1351.57 ;	loss: 0.3264
Total trained pairs (M):	1352.09 ;	loss: 0.3254
Total trained pairs (M):	1352.61 ;	loss: 0.3233
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Total trained pairs (M):	1353.63 ;	loss: 0.3237
Total trained pairs (M):	1354.14 ;	loss: 0.3204
Total trained pairs (M):	1354.66 ;	loss: 0.3239
Total trained pairs (M):	1355.16 ;	loss: 0.3235
Total trained pairs (M):	1355.66 ;	loss: 0.3224
Total trained pairs (M):	1356.15 ;	loss: 0.3226

Total trained pairs (M):	1356.65 ;	loss: 0.3219
Total trained pairs (M):	1357.14 ;	loss: 0.3228
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Total trained pairs (M):	1358.11 ;	loss: 0.3232
Total trained pairs (M):	1358.60 ;	loss: 0.3288
Total trained pairs (M):	1359.07 ;	loss: 0.3278
Total trained pairs (M):	1359.52 ;	loss: 0.3290
Total trained pairs (M):	1359.97 ;	loss: 0.3279
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Total trained pairs (M):	1361.77 ;	loss: 0.3243
Total trained pairs (M):	1362.22 ;	loss: 0.3243
Total trained pairs (M):	1362.69 ;	loss: 0.3239
Total trained pairs (M):	1363.15 ;	loss: 0.3247
Total trained pairs (M):	1363.61 ;	loss: 0.3239
Total trained pairs (M):	1364.07 ;	loss: 0.3256
Total trained pairs (M):	1364.54 ;	loss: 0.3250
Total trained pairs (M):	1365.00 ;	loss: 0.3234
Total trained pairs (M):	1365.46 ;	loss: 0.3242
Total trained pairs (M):	1365.93 ;	loss: 0.3250
Total trained pairs (M):	1366.40 ;	loss: 0.3277
Total trained pairs (M):	1366.87 ;	loss: 0.3276
Total trained pairs (M):	1367.35 ;	loss: 0.3260
Total trained pairs (M):	1367.82 ;	loss: 0.3268
Total trained pairs (M):	1368.30 ;	loss: 0.3263
Total trained pairs (M):	1368.77 ;	loss: 0.3252
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Total trained pairs (M):	1370.68 ;	loss: 0.3217
Total trained pairs (M):	1371.15 ;	loss: 0.3234
Total trained pairs (M):	1371.63 ;	loss: 0.3223
Total trained pairs (M):	1372.10 ;	loss: 0.3228
Total trained pairs (M):	1372.57 ;	loss: 0.3226
Total trained pairs (M):	1373.04 ;	loss: 0.3222
Total trained pairs (M):	1373.52 ;	loss: 0.3222
Total trained pairs (M):	1374.00 ;	loss: 0.3210
Total trained pairs (M):	1374.48 ;	loss: 0.3242
Total trained pairs (M):	1374.95 ;	loss: 0.3225
Total trained pairs (M):	1375.42 ;	loss: 0.3229
Total trained pairs (M):	1375.88 ;	loss: 0.3230
Total trained pairs (M):	1376.35 ;	loss: 0.3298
Total trained pairs (M):	1376.82 ;	loss: 0.3299
Total trained pairs (M):	1377.29 ;	loss: 0.3299
Total trained pairs (M):	1377.76 ;	loss: 0.3281
Total trained pairs (M):	1378.23 ;	loss: 0.3287
Total trained pairs (M):	1378.70 ;	loss: 0.3299
Total trained pairs (M):	1379.17 ;	loss: 0.3307
Total trained pairs (M):	1379.64 ;	loss: 0.3301
Total trained pairs (M):	1380.11 ;	loss: 0.3289
Total trained pairs (M):	1380.58 ;	loss: 0.3294
Total trained pairs (M):	1381.05 ;	loss: 0.3322
Total trained pairs (M):	1381.53 ;	loss: 0.3321
Total trained pairs (M):	1382.01 ;	loss: 0.3330
Total trained pairs (M):	1382.49 ;	loss: 0.3321
Total trained pairs (M):	1382.94 ;	loss: 0.3343
Total trained pairs (M):	1383.39 ;	loss: 0.3374
Total trained pairs (M):	1383.85 ;	loss: 0.3434

Total trained pairs (M):	1384.31 ;	loss: 0.3415
Total trained pairs (M):	1384.76 ;	loss: 0.3430
Total trained pairs (M):	1385.21 ;	loss: 0.3391
Total trained pairs (M):	1385.66 ;	loss: 0.3393
Total trained pairs (M):	1386.12 ;	loss: 0.3379
Total trained pairs (M):	1386.58 ;	loss: 0.3370
Total trained pairs (M):	1387.04 ;	loss: 0.3358
Total trained pairs (M):	1387.49 ;	loss: 0.3350
Total trained pairs (M):	1387.94 ;	loss: 0.3345
Total trained pairs (M):	1388.40 ;	loss: 0.3374
Total trained pairs (M):	1388.86 ;	loss: 0.3383
Total trained pairs (M):	1389.32 ;	loss: 0.3383
Total trained pairs (M):	1389.78 ;	loss: 0.3363
Total trained pairs (M):	1390.23 ;	loss: 0.3379
Total trained pairs (M):	1390.68 ;	loss: 0.3398
Total trained pairs (M):	1391.12 ;	loss: 0.3397
Total trained pairs (M):	1391.57 ;	loss: 0.3422
Total trained pairs (M):	1392.01 ;	loss: 0.3421
Total trained pairs (M):	1392.45 ;	loss: 0.3439
Total trained pairs (M):	1392.88 ;	loss: 0.3436
Total trained pairs (M):	1393.30 ;	loss: 0.3474
Total trained pairs (M):	1393.72 ;	loss: 0.3470
Total trained pairs (M):	1394.13 ;	loss: 0.3460
Total trained pairs (M):	1394.54 ;	loss: 0.3474
Total trained pairs (M):	1394.94 ;	loss: 0.3462
Total trained pairs (M):	1395.34 ;	loss: 0.3511
Total trained pairs (M):	1395.75 ;	loss: 0.3502
Total trained pairs (M):	1396.16 ;	loss: 0.3484
Total trained pairs (M):	1396.56 ;	loss: 0.3480
Total trained pairs (M):	1396.96 ;	loss: 0.3462
Total trained pairs (M):	1397.37 ;	loss: 0.3449
Total trained pairs (M):	1397.77 ;	loss: 0.3488
Total trained pairs (M):	1398.18 ;	loss: 0.3482
Total trained pairs (M):	1398.59 ;	loss: 0.3491
Total trained pairs (M):	1399.00 ;	loss: 0.3480
Total trained pairs (M):	1399.41 ;	loss: 0.3491
Total trained pairs (M):	1399.82 ;	loss: 0.3488
Total trained pairs (M):	1400.23 ;	loss: 0.3553
Total trained pairs (M):	1400.64 ;	loss: 0.3538
Total trained pairs (M):	1401.06 ;	loss: 0.3611
Total trained pairs (M):	1401.48 ;	loss: 0.3624
Total trained pairs (M):	1401.90 ;	loss: 0.3615
Total trained pairs (M):	1402.31 ;	loss: 0.3606
Total trained pairs (M):	1402.74 ;	loss: 0.3649
Total trained pairs (M):	1403.17 ;	loss: 0.3693
Total trained pairs (M):	1403.59 ;	loss: 0.3709
Total trained pairs (M):	1404.01 ;	loss: 0.3694
Total trained pairs (M):	1404.44 ;	loss: 0.3702
Total trained pairs (M):	1404.86 ;	loss: 0.3704
Total trained pairs (M):	1405.29 ;	loss: 0.3694
Total trained pairs (M):	1405.74 ;	loss: 0.3759
Total trained pairs (M):	1406.19 ;	loss: 0.3799
Total trained pairs (M):	1406.64 ;	loss: 0.3792
Total trained pairs (M):	1407.09 ;	loss: 0.3769
Total trained pairs (M):	1407.53 ;	loss: 0.3789
Total trained pairs (M):	1407.97 ;	loss: 0.3771
Total trained pairs (M):	1408.42 ;	loss: 0.3910
Total trained pairs (M):	1408.86 ;	loss: 0.3973
Total trained pairs (M):	1409.31 ;	loss: 0.3962

Total trained pairs (M):	1409.76 ;	loss: 0.3939
Total trained pairs (M):	1410.20 ;	loss: 0.3960
Total trained pairs (M):	1410.64 ;	loss: 0.3947
Total trained pairs (M):	1411.07 ;	loss: 0.4002
Total trained pairs (M):	1411.50 ;	loss: 0.3985
Total trained pairs (M):	1411.93 ;	loss: 0.4004
Total trained pairs (M):	1412.35 ;	loss: 0.4017
Total trained pairs (M):	1412.78 ;	loss: 0.4017
Total trained pairs (M):	1413.21 ;	loss: 0.4055
Total trained pairs (M):	1413.65 ;	loss: 0.4149
Total trained pairs (M):	1414.09 ;	loss: 0.4149
Total trained pairs (M):	1414.54 ;	loss: 0.4169
Total trained pairs (M):	1414.99 ;	loss: 0.4155
Epoch 7 =====		
Total trained pairs (M):	1415.51 ;	loss: 0.5570
Total trained pairs (M):	1416.03 ;	loss: 0.5485
Total trained pairs (M):	1416.56 ;	loss: 0.5338
Total trained pairs (M):	1417.08 ;	loss: 0.5243
Total trained pairs (M):	1417.59 ;	loss: 0.5178
Total trained pairs (M):	1418.10 ;	loss: 0.5085
Total trained pairs (M):	1418.61 ;	loss: 0.5042
Total trained pairs (M):	1419.12 ;	loss: 0.4976
Total trained pairs (M):	1419.62 ;	loss: 0.4920
Total trained pairs (M):	1420.12 ;	loss: 0.4822
Total trained pairs (M):	1420.62 ;	loss: 0.4793
Total trained pairs (M):	1421.12 ;	loss: 0.4754
Total trained pairs (M):	1421.62 ;	loss: 0.4713
Total trained pairs (M):	1422.12 ;	loss: 0.4667
Total trained pairs (M):	1422.61 ;	loss: 0.4617
Total trained pairs (M):	1423.09 ;	loss: 0.4570
Total trained pairs (M):	1423.58 ;	loss: 0.4545
Total trained pairs (M):	1424.06 ;	loss: 0.4499
Total trained pairs (M):	1424.54 ;	loss: 0.4477
Total trained pairs (M):	1425.02 ;	loss: 0.4425
Total trained pairs (M):	1425.50 ;	loss: 0.4398
Total trained pairs (M):	1425.98 ;	loss: 0.4356
Total trained pairs (M):	1426.45 ;	loss: 0.4335
Total trained pairs (M):	1426.93 ;	loss: 0.4313
Total trained pairs (M):	1427.40 ;	loss: 0.4289
Total trained pairs (M):	1427.89 ;	loss: 0.4236
Total trained pairs (M):	1428.38 ;	loss: 0.4178
Total trained pairs (M):	1428.84 ;	loss: 0.4084
Total trained pairs (M):	1429.31 ;	loss: 0.4066
Total trained pairs (M):	1429.78 ;	loss: 0.4030
Total trained pairs (M):	1430.25 ;	loss: 0.4011
Total trained pairs (M):	1430.73 ;	loss: 0.3996
Total trained pairs (M):	1431.21 ;	loss: 0.3979
Total trained pairs (M):	1431.69 ;	loss: 0.3960
Total trained pairs (M):	1432.18 ;	loss: 0.3941
Total trained pairs (M):	1432.67 ;	loss: 0.3912
Total trained pairs (M):	1433.15 ;	loss: 0.3892
Total trained pairs (M):	1433.62 ;	loss: 0.3871
Total trained pairs (M):	1434.10 ;	loss: 0.3846
Total trained pairs (M):	1434.57 ;	loss: 0.3826
Total trained pairs (M):	1435.05 ;	loss: 0.3804
Total trained pairs (M):	1435.53 ;	loss: 0.3718
Total trained pairs (M):	1436.01 ;	loss: 0.3697
Total trained pairs (M):	1436.49 ;	loss: 0.3676
Total trained pairs (M):	1436.97 ;	loss: 0.3654

Total trained pairs (M):	1437.46 ;	loss: 0.3633
Total trained pairs (M):	1437.94 ;	loss: 0.3619
Total trained pairs (M):	1438.42 ;	loss: 0.3612
Total trained pairs (M):	1438.90 ;	loss: 0.3588
Total trained pairs (M):	1439.38 ;	loss: 0.3557
Total trained pairs (M):	1439.87 ;	loss: 0.3547
Total trained pairs (M):	1440.36 ;	loss: 0.3530
Total trained pairs (M):	1440.84 ;	loss: 0.3515
Total trained pairs (M):	1441.33 ;	loss: 0.3489
Total trained pairs (M):	1441.82 ;	loss: 0.3461
Total trained pairs (M):	1442.32 ;	loss: 0.3443
Total trained pairs (M):	1442.83 ;	loss: 0.3478
Total trained pairs (M):	1443.36 ;	loss: 0.3481
Total trained pairs (M):	1443.89 ;	loss: 0.3475
Total trained pairs (M):	1444.41 ;	loss: 0.3458
Total trained pairs (M):	1444.92 ;	loss: 0.3424
Total trained pairs (M):	1445.43 ;	loss: 0.3424
Total trained pairs (M):	1445.94 ;	loss: 0.3408
Total trained pairs (M):	1446.45 ;	loss: 0.3383
Total trained pairs (M):	1446.95 ;	loss: 0.3349
Total trained pairs (M):	1447.43 ;	loss: 0.3336
Total trained pairs (M):	1447.92 ;	loss: 0.3310
Total trained pairs (M):	1448.40 ;	loss: 0.3297
Total trained pairs (M):	1448.89 ;	loss: 0.3287
Total trained pairs (M):	1449.38 ;	loss: 0.3295
Total trained pairs (M):	1449.87 ;	loss: 0.3270
Total trained pairs (M):	1450.37 ;	loss: 0.3304
Total trained pairs (M):	1450.87 ;	loss: 0.3286
Total trained pairs (M):	1451.36 ;	loss: 0.3274
Total trained pairs (M):	1451.85 ;	loss: 0.3250
Total trained pairs (M):	1452.35 ;	loss: 0.3267
Total trained pairs (M):	1452.85 ;	loss: 0.3286
Total trained pairs (M):	1453.35 ;	loss: 0.3279
Total trained pairs (M):	1453.84 ;	loss: 0.3286
Total trained pairs (M):	1454.35 ;	loss: 0.3315
Total trained pairs (M):	1454.86 ;	loss: 0.3295
Total trained pairs (M):	1455.37 ;	loss: 0.3297
Total trained pairs (M):	1455.89 ;	loss: 0.3300
Total trained pairs (M):	1456.41 ;	loss: 0.3284
Total trained pairs (M):	1456.93 ;	loss: 0.3279
Total trained pairs (M):	1457.44 ;	loss: 0.3259
Total trained pairs (M):	1457.97 ;	loss: 0.3319
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Total trained pairs (M):	1459.58 ;	loss: 0.3296
Total trained pairs (M):	1460.13 ;	loss: 0.3295
Total trained pairs (M):	1460.68 ;	loss: 0.3306
Total trained pairs (M):	1461.23 ;	loss: 0.3287
Total trained pairs (M):	1461.79 ;	loss: 0.3285
Total trained pairs (M):	1462.34 ;	loss: 0.3269
Total trained pairs (M):	1462.91 ;	loss: 0.3275
Total trained pairs (M):	1463.46 ;	loss: 0.3271
Total trained pairs (M):	1464.02 ;	loss: 0.3245
Total trained pairs (M):	1464.57 ;	loss: 0.3239
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Total trained pairs (M):	1465.61 ;	loss: 0.3256
Total trained pairs (M):	1466.13 ;	loss: 0.3268
Total trained pairs (M):	1466.64 ;	loss: 0.3277
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Total trained pairs (M):	1467.66 ;	loss: 0.3243
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Total trained pairs (M):	1468.68 ;	loss: 0.3233
Total trained pairs (M):	1469.19 ;	loss: 0.3229
Total trained pairs (M):	1469.70 ;	loss: 0.3228
Total trained pairs (M):	1470.21 ;	loss: 0.3226
Total trained pairs (M):	1470.72 ;	loss: 0.3240
Total trained pairs (M):	1471.23 ;	loss: 0.3215
Total trained pairs (M):	1471.74 ;	loss: 0.3210
Total trained pairs (M):	1472.25 ;	loss: 0.3229
Total trained pairs (M):	1472.76 ;	loss: 0.3207
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Total trained pairs (M):	1474.32 ;	loss: 0.3217
Total trained pairs (M):	1474.85 ;	loss: 0.3208
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Total trained pairs (M):	1475.91 ;	loss: 0.3206
Total trained pairs (M):	1476.43 ;	loss: 0.3192
Total trained pairs (M):	1476.96 ;	loss: 0.3182
Total trained pairs (M):	1477.49 ;	loss: 0.3177
Total trained pairs (M):	1478.03 ;	loss: 0.3164
Total trained pairs (M):	1478.55 ;	loss: 0.3182
Total trained pairs (M):	1479.07 ;	loss: 0.3183
Total trained pairs (M):	1479.59 ;	loss: 0.3161
Total trained pairs (M):	1480.11 ;	loss: 0.3166
Total trained pairs (M):	1480.64 ;	loss: 0.3172
Total trained pairs (M):	1481.16 ;	loss: 0.3173
Total trained pairs (M):	1481.68 ;	loss: 0.3160
Total trained pairs (M):	1482.20 ;	loss: 0.3153
Total trained pairs (M):	1482.72 ;	loss: 0.3154
Total trained pairs (M):	1483.23 ;	loss: 0.3139
Total trained pairs (M):	1483.74 ;	loss: 0.3128
Total trained pairs (M):	1484.25 ;	loss: 0.3130
Total trained pairs (M):	1484.78 ;	loss: 0.3154
Total trained pairs (M):	1485.31 ;	loss: 0.3133
Total trained pairs (M):	1485.83 ;	loss: 0.3114
Total trained pairs (M):	1486.36 ;	loss: 0.3138
Total trained pairs (M):	1486.88 ;	loss: 0.3131
Total trained pairs (M):	1487.42 ;	loss: 0.3177
Total trained pairs (M):	1487.95 ;	loss: 0.3185
Total trained pairs (M):	1488.48 ;	loss: 0.3193
Total trained pairs (M):	1489.02 ;	loss: 0.3170
Total trained pairs (M):	1489.56 ;	loss: 0.3163
Total trained pairs (M):	1490.09 ;	loss: 0.3149
Total trained pairs (M):	1490.63 ;	loss: 0.3138
Total trained pairs (M):	1491.16 ;	loss: 0.3122
Total trained pairs (M):	1491.69 ;	loss: 0.3115
Total trained pairs (M):	1492.22 ;	loss: 0.3116
Total trained pairs (M):	1492.75 ;	loss: 0.3123
Total trained pairs (M):	1493.28 ;	loss: 0.3096
Total trained pairs (M):	1493.81 ;	loss: 0.3088
Total trained pairs (M):	1494.33 ;	loss: 0.3111
Total trained pairs (M):	1494.83 ;	loss: 0.3109
Total trained pairs (M):	1495.32 ;	loss: 0.3104
Total trained pairs (M):	1495.81 ;	loss: 0.3095
Total trained pairs (M):	1496.30 ;	loss: 0.3091
Total trained pairs (M):	1496.79 ;	loss: 0.3072
Total trained pairs (M):	1497.27 ;	loss: 0.3065
Total trained pairs (M):	1497.76 ;	loss: 0.3085

Total trained pairs (M):	1498.28 ;	loss: 0.3083
Total trained pairs (M):	1498.79 ;	loss: 0.3081
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Total trained pairs (M):	1501.89 ;	loss: 0.3052
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Total trained pairs (M):	1502.90 ;	loss: 0.3052
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Total trained pairs (M):	1503.91 ;	loss: 0.3034
Total trained pairs (M):	1504.40 ;	loss: 0.3033
Total trained pairs (M):	1504.88 ;	loss: 0.3032
Total trained pairs (M):	1505.36 ;	loss: 0.3025
Total trained pairs (M):	1505.83 ;	loss: 0.3022
Total trained pairs (M):	1506.29 ;	loss: 0.3031
Total trained pairs (M):	1506.75 ;	loss: 0.3037
Total trained pairs (M):	1507.21 ;	loss: 0.3026
Total trained pairs (M):	1507.65 ;	loss: 0.3022
Total trained pairs (M):	1508.09 ;	loss: 0.3025
Total trained pairs (M):	1508.53 ;	loss: 0.3010
Total trained pairs (M):	1508.98 ;	loss: 0.3020
Total trained pairs (M):	1509.40 ;	loss: 0.3021
Total trained pairs (M):	1509.83 ;	loss: 0.3036
Total trained pairs (M):	1510.25 ;	loss: 0.3017
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Total trained pairs (M):	1513.59 ;	loss: 0.3156
Total trained pairs (M):	1514.01 ;	loss: 0.3164
Total trained pairs (M):	1514.45 ;	loss: 0.3223
Total trained pairs (M):	1514.91 ;	loss: 0.3276
Total trained pairs (M):	1515.37 ;	loss: 0.3268
Total trained pairs (M):	1515.81 ;	loss: 0.3291
Total trained pairs (M):	1516.26 ;	loss: 0.3268
Total trained pairs (M):	1516.71 ;	loss: 0.3256
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Total trained pairs (M):	1517.60 ;	loss: 0.3235
Total trained pairs (M):	1518.04 ;	loss: 0.3227
Total trained pairs (M):	1518.49 ;	loss: 0.3226
Total trained pairs (M):	1518.93 ;	loss: 0.3231
Total trained pairs (M):	1519.38 ;	loss: 0.3223
Total trained pairs (M):	1519.83 ;	loss: 0.3220
Total trained pairs (M):	1520.28 ;	loss: 0.3230
Total trained pairs (M):	1520.73 ;	loss: 0.3211
Total trained pairs (M):	1521.18 ;	loss: 0.3238
Total trained pairs (M):	1521.63 ;	loss: 0.3197
Total trained pairs (M):	1522.07 ;	loss: 0.3208
Total trained pairs (M):	1522.51 ;	loss: 0.3233
Total trained pairs (M):	1522.95 ;	loss: 0.3220
Total trained pairs (M):	1523.40 ;	loss: 0.3232
Total trained pairs (M):	1523.83 ;	loss: 0.3233
Total trained pairs (M):	1524.27 ;	loss: 0.3216
Total trained pairs (M):	1524.71 ;	loss: 0.3186

Total trained pairs (M):	1525.15 ;	loss: 0.3208
Total trained pairs (M):	1525.59 ;	loss: 0.3178
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Total trained pairs (M):	1526.92 ;	loss: 0.3196
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Total trained pairs (M):	1527.81 ;	loss: 0.3180
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Total trained pairs (M):	1530.97 ;	loss: 0.3238
Total trained pairs (M):	1531.44 ;	loss: 0.3251
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Total trained pairs (M):	1532.81 ;	loss: 0.3225
Total trained pairs (M):	1533.26 ;	loss: 0.3246
Total trained pairs (M):	1533.72 ;	loss: 0.3219
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Total trained pairs (M):	1534.59 ;	loss: 0.3266
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Total trained pairs (M):	1536.77 ;	loss: 0.3242
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Total trained pairs (M):	1540.57 ;	loss: 0.3334
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Total trained pairs (M):	1543.42 ;	loss: 0.3296
Total trained pairs (M):	1543.88 ;	loss: 0.3293
Total trained pairs (M):	1544.33 ;	loss: 0.3279
Total trained pairs (M):	1544.80 ;	loss: 0.3281
Total trained pairs (M):	1545.27 ;	loss: 0.3296
Total trained pairs (M):	1545.73 ;	loss: 0.3300
Total trained pairs (M):	1546.20 ;	loss: 0.3293
Total trained pairs (M):	1546.67 ;	loss: 0.3279
Total trained pairs (M):	1547.15 ;	loss: 0.3280
Total trained pairs (M):	1547.63 ;	loss: 0.3278
Total trained pairs (M):	1548.12 ;	loss: 0.3258
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Total trained pairs (M):	1554.23 ;	loss: 0.3191
Total trained pairs (M):	1554.75 ;	loss: 0.3174
Total trained pairs (M):	1555.27 ;	loss: 0.3171
Total trained pairs (M):	1555.78 ;	loss: 0.3166
Total trained pairs (M):	1556.28 ;	loss: 0.3155
Total trained pairs (M):	1556.80 ;	loss: 0.3171
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Total trained pairs (M):	1557.80 ;	loss: 0.3162
Total trained pairs (M):	1558.29 ;	loss: 0.3166
Total trained pairs (M):	1558.79 ;	loss: 0.3167
Total trained pairs (M):	1559.28 ;	loss: 0.3151
Total trained pairs (M):	1559.78 ;	loss: 0.3147
Total trained pairs (M):	1560.26 ;	loss: 0.3173
Total trained pairs (M):	1560.74 ;	loss: 0.3219
Total trained pairs (M):	1561.21 ;	loss: 0.3218
Total trained pairs (M):	1561.66 ;	loss: 0.3211
Total trained pairs (M):	1562.11 ;	loss: 0.3211
Total trained pairs (M):	1562.55 ;	loss: 0.3196
Total trained pairs (M):	1563.00 ;	loss: 0.3186
Total trained pairs (M):	1563.46 ;	loss: 0.3193
Total trained pairs (M):	1563.91 ;	loss: 0.3177
Total trained pairs (M):	1564.37 ;	loss: 0.3174
Total trained pairs (M):	1564.83 ;	loss: 0.3181
Total trained pairs (M):	1565.29 ;	loss: 0.3182
Total trained pairs (M):	1565.75 ;	loss: 0.3177
Total trained pairs (M):	1566.22 ;	loss: 0.3200
Total trained pairs (M):	1566.68 ;	loss: 0.3176
Total trained pairs (M):	1567.14 ;	loss: 0.3164
Total trained pairs (M):	1567.61 ;	loss: 0.3173
Total trained pairs (M):	1568.07 ;	loss: 0.3181
Total trained pairs (M):	1568.54 ;	loss: 0.3218
Total trained pairs (M):	1569.01 ;	loss: 0.3205
Total trained pairs (M):	1569.49 ;	loss: 0.3193
Total trained pairs (M):	1569.97 ;	loss: 0.3196
Total trained pairs (M):	1570.44 ;	loss: 0.3175
Total trained pairs (M):	1570.91 ;	loss: 0.3188
Total trained pairs (M):	1571.38 ;	loss: 0.3185
Total trained pairs (M):	1571.86 ;	loss: 0.3181
Total trained pairs (M):	1572.34 ;	loss: 0.3145
Total trained pairs (M):	1572.82 ;	loss: 0.3145
Total trained pairs (M):	1573.29 ;	loss: 0.3191
Total trained pairs (M):	1573.77 ;	loss: 0.3164
Total trained pairs (M):	1574.24 ;	loss: 0.3167
Total trained pairs (M):	1574.71 ;	loss: 0.3160
Total trained pairs (M):	1575.19 ;	loss: 0.3150
Total trained pairs (M):	1575.66 ;	loss: 0.3151
Total trained pairs (M):	1576.14 ;	loss: 0.3156
Total trained pairs (M):	1576.62 ;	loss: 0.3180
Total trained pairs (M):	1577.09 ;	loss: 0.3155
Total trained pairs (M):	1577.56 ;	loss: 0.3153
Total trained pairs (M):	1578.02 ;	loss: 0.3151
Total trained pairs (M):	1578.49 ;	loss: 0.3230
Total trained pairs (M):	1578.96 ;	loss: 0.3237
Total trained pairs (M):	1579.43 ;	loss: 0.3230
Total trained pairs (M):	1579.90 ;	loss: 0.3212
Total trained pairs (M):	1580.37 ;	loss: 0.3229

Total trained pairs (M):	1580.84 ;	loss: 0.3230
Total trained pairs (M):	1581.32 ;	loss: 0.3217
Total trained pairs (M):	1581.79 ;	loss: 0.3227
Total trained pairs (M):	1582.25 ;	loss: 0.3219
Total trained pairs (M):	1582.72 ;	loss: 0.3217
Total trained pairs (M):	1583.19 ;	loss: 0.3244
Total trained pairs (M):	1583.67 ;	loss: 0.3251
Total trained pairs (M):	1584.15 ;	loss: 0.3253
Total trained pairs (M):	1584.63 ;	loss: 0.3261
Total trained pairs (M):	1585.08 ;	loss: 0.3266
Total trained pairs (M):	1585.53 ;	loss: 0.3299
Total trained pairs (M):	1585.99 ;	loss: 0.3351
Total trained pairs (M):	1586.45 ;	loss: 0.3332
Total trained pairs (M):	1586.90 ;	loss: 0.3335
Total trained pairs (M):	1587.35 ;	loss: 0.3337
Total trained pairs (M):	1587.81 ;	loss: 0.3330
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Total trained pairs (M):	1589.18 ;	loss: 0.3280
Total trained pairs (M):	1589.63 ;	loss: 0.3281
Total trained pairs (M):	1590.09 ;	loss: 0.3256
Total trained pairs (M):	1590.54 ;	loss: 0.3303
Total trained pairs (M):	1591.00 ;	loss: 0.3309
Total trained pairs (M):	1591.46 ;	loss: 0.3318
Total trained pairs (M):	1591.92 ;	loss: 0.3290
Total trained pairs (M):	1592.37 ;	loss: 0.3319
Total trained pairs (M):	1592.82 ;	loss: 0.3331
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Total trained pairs (M):	1594.59 ;	loss: 0.3355
Total trained pairs (M):	1595.02 ;	loss: 0.3359
Total trained pairs (M):	1595.44 ;	loss: 0.3389
Total trained pairs (M):	1595.86 ;	loss: 0.3386
Total trained pairs (M):	1596.27 ;	loss: 0.3416
Total trained pairs (M):	1596.68 ;	loss: 0.3406
Total trained pairs (M):	1597.08 ;	loss: 0.3399
Total trained pairs (M):	1597.49 ;	loss: 0.3445
Total trained pairs (M):	1597.89 ;	loss: 0.3422
Total trained pairs (M):	1598.30 ;	loss: 0.3402
Total trained pairs (M):	1598.70 ;	loss: 0.3386
Total trained pairs (M):	1599.11 ;	loss: 0.3406
Total trained pairs (M):	1599.51 ;	loss: 0.3384
Total trained pairs (M):	1599.92 ;	loss: 0.3414
Total trained pairs (M):	1600.32 ;	loss: 0.3423
Total trained pairs (M):	1600.73 ;	loss: 0.3424
Total trained pairs (M):	1601.14 ;	loss: 0.3421
Total trained pairs (M):	1601.55 ;	loss: 0.3420
Total trained pairs (M):	1601.96 ;	loss: 0.3412
Total trained pairs (M):	1602.37 ;	loss: 0.3482
Total trained pairs (M):	1602.79 ;	loss: 0.3477
Total trained pairs (M):	1603.20 ;	loss: 0.3555
Total trained pairs (M):	1603.62 ;	loss: 0.3544
Total trained pairs (M):	1604.04 ;	loss: 0.3556
Total trained pairs (M):	1604.45 ;	loss: 0.3543
Total trained pairs (M):	1604.88 ;	loss: 0.3578
Total trained pairs (M):	1605.31 ;	loss: 0.3615
Total trained pairs (M):	1605.73 ;	loss: 0.3630
Total trained pairs (M):	1606.15 ;	loss: 0.3661

Total trained pairs (M):	1606.58 ;	loss: 0.3635
Total trained pairs (M):	1607.01 ;	loss: 0.3642
Total trained pairs (M):	1607.43 ;	loss: 0.3654
Total trained pairs (M):	1607.88 ;	loss: 0.3678
Total trained pairs (M):	1608.33 ;	loss: 0.3741
Total trained pairs (M):	1608.78 ;	loss: 0.3738
Total trained pairs (M):	1609.23 ;	loss: 0.3727
Total trained pairs (M):	1609.67 ;	loss: 0.3732
Total trained pairs (M):	1610.11 ;	loss: 0.3726
Total trained pairs (M):	1610.56 ;	loss: 0.3850
Total trained pairs (M):	1611.01 ;	loss: 0.3909
Total trained pairs (M):	1611.46 ;	loss: 0.3924
Total trained pairs (M):	1611.90 ;	loss: 0.3907
Total trained pairs (M):	1612.34 ;	loss: 0.3915
Total trained pairs (M):	1612.78 ;	loss: 0.3904
Total trained pairs (M):	1613.22 ;	loss: 0.3952
Total trained pairs (M):	1613.65 ;	loss: 0.3951
Total trained pairs (M):	1614.07 ;	loss: 0.3958
Total trained pairs (M):	1614.50 ;	loss: 0.3966
Total trained pairs (M):	1614.92 ;	loss: 0.4003
Total trained pairs (M):	1615.35 ;	loss: 0.4015
Total trained pairs (M):	1615.79 ;	loss: 0.4118
Total trained pairs (M):	1616.23 ;	loss: 0.4124
Total trained pairs (M):	1616.68 ;	loss: 0.4134
Total trained pairs (M):	1617.14 ;	loss: 0.4124
Epoch 8 =====		
Total trained pairs (M):	1617.65 ;	loss: 0.5523
Total trained pairs (M):	1618.18 ;	loss: 0.5425
Total trained pairs (M):	1618.70 ;	loss: 0.5300
Total trained pairs (M):	1619.22 ;	loss: 0.5185
Total trained pairs (M):	1619.73 ;	loss: 0.5113
Total trained pairs (M):	1620.24 ;	loss: 0.5053
Total trained pairs (M):	1620.76 ;	loss: 0.4989
Total trained pairs (M):	1621.26 ;	loss: 0.4923
Total trained pairs (M):	1621.76 ;	loss: 0.4871
Total trained pairs (M):	1622.26 ;	loss: 0.4770
Total trained pairs (M):	1622.76 ;	loss: 0.4734
Total trained pairs (M):	1623.26 ;	loss: 0.4667
Total trained pairs (M):	1623.76 ;	loss: 0.4641
Total trained pairs (M):	1624.26 ;	loss: 0.4610
Total trained pairs (M):	1624.75 ;	loss: 0.4550
Total trained pairs (M):	1625.24 ;	loss: 0.4489
Total trained pairs (M):	1625.72 ;	loss: 0.4475
Total trained pairs (M):	1626.20 ;	loss: 0.4435
Total trained pairs (M):	1626.68 ;	loss: 0.4396
Total trained pairs (M):	1627.16 ;	loss: 0.4358
Total trained pairs (M):	1627.64 ;	loss: 0.4321
Total trained pairs (M):	1628.12 ;	loss: 0.4292
Total trained pairs (M):	1628.59 ;	loss: 0.4251
Total trained pairs (M):	1629.07 ;	loss: 0.4240
Total trained pairs (M):	1629.54 ;	loss: 0.4217
Total trained pairs (M):	1630.03 ;	loss: 0.4144
Total trained pairs (M):	1630.52 ;	loss: 0.4118
Total trained pairs (M):	1630.98 ;	loss: 0.4010
Total trained pairs (M):	1631.45 ;	loss: 0.3996
Total trained pairs (M):	1631.92 ;	loss: 0.3963
Total trained pairs (M):	1632.39 ;	loss: 0.3932
Total trained pairs (M):	1632.87 ;	loss: 0.3923
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Total trained pairs (M):	1633.83 ;	loss: 0.3879
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Total trained pairs (M):	1634.81 ;	loss: 0.3837
Total trained pairs (M):	1635.29 ;	loss: 0.3806
Total trained pairs (M):	1635.76 ;	loss: 0.3790
Total trained pairs (M):	1636.24 ;	loss: 0.3765
Total trained pairs (M):	1636.71 ;	loss: 0.3744
Total trained pairs (M):	1637.19 ;	loss: 0.3715
Total trained pairs (M):	1637.67 ;	loss: 0.3621
Total trained pairs (M):	1638.15 ;	loss: 0.3612
Total trained pairs (M):	1638.63 ;	loss: 0.3591
Total trained pairs (M):	1639.11 ;	loss: 0.3570
Total trained pairs (M):	1639.60 ;	loss: 0.3554
Total trained pairs (M):	1640.08 ;	loss: 0.3528
Total trained pairs (M):	1640.56 ;	loss: 0.3513
Total trained pairs (M):	1641.04 ;	loss: 0.3498
Total trained pairs (M):	1641.52 ;	loss: 0.3476
Total trained pairs (M):	1642.01 ;	loss: 0.3475
Total trained pairs (M):	1642.50 ;	loss: 0.3439
Total trained pairs (M):	1642.99 ;	loss: 0.3420
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Total trained pairs (M):	1643.96 ;	loss: 0.3390
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Total trained pairs (M):	1645.51 ;	loss: 0.3391
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Total trained pairs (M):	1647.58 ;	loss: 0.3359
Total trained pairs (M):	1648.09 ;	loss: 0.3324
Total trained pairs (M):	1648.60 ;	loss: 0.3313
Total trained pairs (M):	1649.09 ;	loss: 0.3291
Total trained pairs (M):	1649.58 ;	loss: 0.3243
Total trained pairs (M):	1650.06 ;	loss: 0.3238
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Total trained pairs (M):	1653.99 ;	loss: 0.3181
Total trained pairs (M):	1654.49 ;	loss: 0.3196
Total trained pairs (M):	1654.99 ;	loss: 0.3216
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Total trained pairs (M):	1655.98 ;	loss: 0.3202
Total trained pairs (M):	1656.49 ;	loss: 0.3232
Total trained pairs (M):	1657.00 ;	loss: 0.3215
Total trained pairs (M):	1657.51 ;	loss: 0.3206
Total trained pairs (M):	1658.03 ;	loss: 0.3222
Total trained pairs (M):	1658.55 ;	loss: 0.3219
Total trained pairs (M):	1659.07 ;	loss: 0.3215
Total trained pairs (M):	1659.58 ;	loss: 0.3179
Total trained pairs (M):	1660.11 ;	loss: 0.3233
Total trained pairs (M):	1660.65 ;	loss: 0.3237
Total trained pairs (M):	1661.19 ;	loss: 0.3238
Total trained pairs (M):	1661.73 ;	loss: 0.3215
Total trained pairs (M):	1662.27 ;	loss: 0.3198
Total trained pairs (M):	1662.82 ;	loss: 0.3212

Total trained pairs (M):	1663.38 ;	loss: 0.3206
Total trained pairs (M):	1663.94 ;	loss: 0.3204
Total trained pairs (M):	1664.48 ;	loss: 0.3195
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Total trained pairs (M):	1666.71 ;	loss: 0.3176
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Total trained pairs (M):	1667.75 ;	loss: 0.3163
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Total trained pairs (M):	1668.78 ;	loss: 0.3187
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Total trained pairs (M):	1669.80 ;	loss: 0.3189
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Total trained pairs (M):	1670.83 ;	loss: 0.3164
Total trained pairs (M):	1671.33 ;	loss: 0.3143
Total trained pairs (M):	1671.84 ;	loss: 0.3163
Total trained pairs (M):	1672.35 ;	loss: 0.3160
Total trained pairs (M):	1672.86 ;	loss: 0.3163
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Total trained pairs (M):	1673.88 ;	loss: 0.3141
Total trained pairs (M):	1674.39 ;	loss: 0.3133
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Total trained pairs (M):	1675.42 ;	loss: 0.3147
Total trained pairs (M):	1675.94 ;	loss: 0.3154
Total trained pairs (M):	1676.47 ;	loss: 0.3153
Total trained pairs (M):	1676.99 ;	loss: 0.3146
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Total trained pairs (M):	1678.05 ;	loss: 0.3130
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Total trained pairs (M):	1681.74 ;	loss: 0.3087
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Total trained pairs (M):	1682.78 ;	loss: 0.3113
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Total trained pairs (M):	1683.82 ;	loss: 0.3099
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Total trained pairs (M):	1685.88 ;	loss: 0.3054
Total trained pairs (M):	1686.40 ;	loss: 0.3056
Total trained pairs (M):	1686.92 ;	loss: 0.3065
Total trained pairs (M):	1687.45 ;	loss: 0.3060
Total trained pairs (M):	1687.98 ;	loss: 0.3042
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Total trained pairs (M):	1692.23 ;	loss: 0.3067
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Total trained pairs (M):	1693.83 ;	loss: 0.3040

Total trained pairs (M):	1694.36 ;	loss: 0.3035
Total trained pairs (M):	1694.89 ;	loss: 0.3051
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Total trained pairs (M):	1696.97 ;	loss: 0.3038
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Total trained pairs (M):	1698.44 ;	loss: 0.3024
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Total trained pairs (M):	1706.54 ;	loss: 0.2972
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Total trained pairs (M):	1708.89 ;	loss: 0.2975
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Total trained pairs (M):	1711.54 ;	loss: 0.2952
Total trained pairs (M):	1711.97 ;	loss: 0.2980
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Total trained pairs (M):	1714.91 ;	loss: 0.3049
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Total trained pairs (M):	1715.73 ;	loss: 0.3095
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Total trained pairs (M):	1716.59 ;	loss: 0.3169
Total trained pairs (M):	1717.05 ;	loss: 0.3238
Total trained pairs (M):	1717.51 ;	loss: 0.3223
Total trained pairs (M):	1717.96 ;	loss: 0.3232
Total trained pairs (M):	1718.40 ;	loss: 0.3214
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Total trained pairs (M):	1720.18 ;	loss: 0.3174
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Total trained pairs (M):	1721.53 ;	loss: 0.3173

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Total trained pairs (M):	1724.65 ;	loss: 0.3158
Total trained pairs (M):	1725.09 ;	loss: 0.3158
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Total trained pairs (M):	1728.62 ;	loss: 0.3162
Total trained pairs (M):	1729.06 ;	loss: 0.3164
Total trained pairs (M):	1729.51 ;	loss: 0.3146
Total trained pairs (M):	1729.96 ;	loss: 0.3126
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Total trained pairs (M):	1734.95 ;	loss: 0.3177
Total trained pairs (M):	1735.41 ;	loss: 0.3190
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Total trained pairs (M):	1737.17 ;	loss: 0.3206
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Total trained pairs (M):	1738.04 ;	loss: 0.3217
Total trained pairs (M):	1738.47 ;	loss: 0.3207
Total trained pairs (M):	1738.91 ;	loss: 0.3196
Total trained pairs (M):	1739.39 ;	loss: 0.3326
Total trained pairs (M):	1739.86 ;	loss: 0.3324
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Total trained pairs (M):	1740.81 ;	loss: 0.3299
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Total trained pairs (M):	1741.77 ;	loss: 0.3298
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Total trained pairs (M):	1743.66 ;	loss: 0.3270
Total trained pairs (M):	1744.13 ;	loss: 0.3245
Total trained pairs (M):	1744.61 ;	loss: 0.3242
Total trained pairs (M):	1745.09 ;	loss: 0.3234
Total trained pairs (M):	1745.56 ;	loss: 0.3261
Total trained pairs (M):	1746.02 ;	loss: 0.3254
Total trained pairs (M):	1746.48 ;	loss: 0.3238
Total trained pairs (M):	1746.94 ;	loss: 0.3240
Total trained pairs (M):	1747.41 ;	loss: 0.3260
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Total trained pairs (M):	1748.34 ;	loss: 0.3251

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Total trained pairs (M):	1749.77 ;	loss: 0.3233
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Total trained pairs (M):	1750.76 ;	loss: 0.3226
Total trained pairs (M):	1751.26 ;	loss: 0.3221
Total trained pairs (M):	1751.77 ;	loss: 0.3220
Total trained pairs (M):	1752.28 ;	loss: 0.3234
Total trained pairs (M):	1752.79 ;	loss: 0.3224
Total trained pairs (M):	1753.30 ;	loss: 0.3218
Total trained pairs (M):	1753.81 ;	loss: 0.3192
Total trained pairs (M):	1754.32 ;	loss: 0.3185
Total trained pairs (M):	1754.83 ;	loss: 0.3176
Total trained pairs (M):	1755.34 ;	loss: 0.3169
Total trained pairs (M):	1755.86 ;	loss: 0.3169
Total trained pairs (M):	1756.38 ;	loss: 0.3153
Total trained pairs (M):	1756.89 ;	loss: 0.3132
Total trained pairs (M):	1757.41 ;	loss: 0.3114
Total trained pairs (M):	1757.92 ;	loss: 0.3134
Total trained pairs (M):	1758.42 ;	loss: 0.3105
Total trained pairs (M):	1758.94 ;	loss: 0.3136
Total trained pairs (M):	1759.44 ;	loss: 0.3135
Total trained pairs (M):	1759.94 ;	loss: 0.3128
Total trained pairs (M):	1760.44 ;	loss: 0.3116
Total trained pairs (M):	1760.93 ;	loss: 0.3106
Total trained pairs (M):	1761.43 ;	loss: 0.3119
Total trained pairs (M):	1761.92 ;	loss: 0.3098
Total trained pairs (M):	1762.40 ;	loss: 0.3129
Total trained pairs (M):	1762.88 ;	loss: 0.3177
Total trained pairs (M):	1763.35 ;	loss: 0.3174
Total trained pairs (M):	1763.80 ;	loss: 0.3161
Total trained pairs (M):	1764.25 ;	loss: 0.3164
Total trained pairs (M):	1764.70 ;	loss: 0.3165
Total trained pairs (M):	1765.15 ;	loss: 0.3136
Total trained pairs (M):	1765.60 ;	loss: 0.3140
Total trained pairs (M):	1766.05 ;	loss: 0.3134
Total trained pairs (M):	1766.51 ;	loss: 0.3116
Total trained pairs (M):	1766.97 ;	loss: 0.3124
Total trained pairs (M):	1767.43 ;	loss: 0.3125
Total trained pairs (M):	1767.89 ;	loss: 0.3118
Total trained pairs (M):	1768.36 ;	loss: 0.3140
Total trained pairs (M):	1768.82 ;	loss: 0.3131
Total trained pairs (M):	1769.28 ;	loss: 0.3111
Total trained pairs (M):	1769.75 ;	loss: 0.3114
Total trained pairs (M):	1770.21 ;	loss: 0.3128
Total trained pairs (M):	1770.68 ;	loss: 0.3152
Total trained pairs (M):	1771.16 ;	loss: 0.3152
Total trained pairs (M):	1771.63 ;	loss: 0.3152
Total trained pairs (M):	1772.11 ;	loss: 0.3133
Total trained pairs (M):	1772.58 ;	loss: 0.3127
Total trained pairs (M):	1773.05 ;	loss: 0.3139
Total trained pairs (M):	1773.53 ;	loss: 0.3126
Total trained pairs (M):	1774.00 ;	loss: 0.3116
Total trained pairs (M):	1774.48 ;	loss: 0.3108
Total trained pairs (M):	1774.96 ;	loss: 0.3094
Total trained pairs (M):	1775.43 ;	loss: 0.3123
Total trained pairs (M):	1775.91 ;	loss: 0.3124
Total trained pairs (M):	1776.38 ;	loss: 0.3111
Total trained pairs (M):	1776.85 ;	loss: 0.3109

Total trained pairs (M):	1777.33 ;	loss: 0.3091
Total trained pairs (M):	1777.80 ;	loss: 0.3105
Total trained pairs (M):	1778.28 ;	loss: 0.3096
Total trained pairs (M):	1778.76 ;	loss: 0.3106
Total trained pairs (M):	1779.23 ;	loss: 0.3100
Total trained pairs (M):	1779.70 ;	loss: 0.3103
Total trained pairs (M):	1780.16 ;	loss: 0.3088
Total trained pairs (M):	1780.63 ;	loss: 0.3161
Total trained pairs (M):	1781.10 ;	loss: 0.3183
Total trained pairs (M):	1781.57 ;	loss: 0.3170
Total trained pairs (M):	1782.04 ;	loss: 0.3149
Total trained pairs (M):	1782.51 ;	loss: 0.3163
Total trained pairs (M):	1782.98 ;	loss: 0.3167
Total trained pairs (M):	1783.46 ;	loss: 0.3175
Total trained pairs (M):	1783.93 ;	loss: 0.3169
Total trained pairs (M):	1784.40 ;	loss: 0.3172
Total trained pairs (M):	1784.86 ;	loss: 0.3184
Total trained pairs (M):	1785.33 ;	loss: 0.3184
Total trained pairs (M):	1785.81 ;	loss: 0.3178
Total trained pairs (M):	1786.29 ;	loss: 0.3208
Total trained pairs (M):	1786.77 ;	loss: 0.3189
Total trained pairs (M):	1787.22 ;	loss: 0.3221
Total trained pairs (M):	1787.67 ;	loss: 0.3232
Total trained pairs (M):	1788.13 ;	loss: 0.3295
Total trained pairs (M):	1788.59 ;	loss: 0.3278
Total trained pairs (M):	1789.04 ;	loss: 0.3293
Total trained pairs (M):	1789.49 ;	loss: 0.3270
Total trained pairs (M):	1789.95 ;	loss: 0.3263
Total trained pairs (M):	1790.40 ;	loss: 0.3238
Total trained pairs (M):	1790.86 ;	loss: 0.3231
Total trained pairs (M):	1791.32 ;	loss: 0.3221
Total trained pairs (M):	1791.77 ;	loss: 0.3235
Total trained pairs (M):	1792.23 ;	loss: 0.3224
Total trained pairs (M):	1792.69 ;	loss: 0.3240
Total trained pairs (M):	1793.15 ;	loss: 0.3240
Total trained pairs (M):	1793.60 ;	loss: 0.3247
Total trained pairs (M):	1794.06 ;	loss: 0.3227
Total trained pairs (M):	1794.51 ;	loss: 0.3256
Total trained pairs (M):	1794.96 ;	loss: 0.3269
Total trained pairs (M):	1795.41 ;	loss: 0.3267
Total trained pairs (M):	1795.85 ;	loss: 0.3291
Total trained pairs (M):	1796.29 ;	loss: 0.3307
Total trained pairs (M):	1796.73 ;	loss: 0.3301
Total trained pairs (M):	1797.16 ;	loss: 0.3306
Total trained pairs (M):	1797.58 ;	loss: 0.3325
Total trained pairs (M):	1798.00 ;	loss: 0.3341
Total trained pairs (M):	1798.41 ;	loss: 0.3348
Total trained pairs (M):	1798.82 ;	loss: 0.3341
Total trained pairs (M):	1799.22 ;	loss: 0.3332
Total trained pairs (M):	1799.63 ;	loss: 0.3383
Total trained pairs (M):	1800.03 ;	loss: 0.3368
Total trained pairs (M):	1800.44 ;	loss: 0.3358
Total trained pairs (M):	1800.84 ;	loss: 0.3354
Total trained pairs (M):	1801.25 ;	loss: 0.3338
Total trained pairs (M):	1801.65 ;	loss: 0.3316
Total trained pairs (M):	1802.06 ;	loss: 0.3369
Total trained pairs (M):	1802.46 ;	loss: 0.3377
Total trained pairs (M):	1802.87 ;	loss: 0.3378
Total trained pairs (M):	1803.28 ;	loss: 0.3360

Total trained pairs (M):	1803.69 ;	loss: 0.3377
Total trained pairs (M):	1804.10 ;	loss: 0.3361
Total trained pairs (M):	1804.52 ;	loss: 0.3430
Total trained pairs (M):	1804.93 ;	loss: 0.3419
Total trained pairs (M):	1805.34 ;	loss: 0.3496
Total trained pairs (M):	1805.76 ;	loss: 0.3502
Total trained pairs (M):	1806.18 ;	loss: 0.3506
Total trained pairs (M):	1806.60 ;	loss: 0.3501
Total trained pairs (M):	1807.02 ;	loss: 0.3539
Total trained pairs (M):	1807.45 ;	loss: 0.3563
Total trained pairs (M):	1807.87 ;	loss: 0.3604
Total trained pairs (M):	1808.29 ;	loss: 0.3594
Total trained pairs (M):	1808.72 ;	loss: 0.3575
Total trained pairs (M):	1809.15 ;	loss: 0.3607
Total trained pairs (M):	1809.58 ;	loss: 0.3611
Total trained pairs (M):	1810.02 ;	loss: 0.3641
Total trained pairs (M):	1810.47 ;	loss: 0.3714
Total trained pairs (M):	1810.92 ;	loss: 0.3691
Total trained pairs (M):	1811.37 ;	loss: 0.3673
Total trained pairs (M):	1811.81 ;	loss: 0.3694
Total trained pairs (M):	1812.25 ;	loss: 0.3701
Total trained pairs (M):	1812.70 ;	loss: 0.3820
Total trained pairs (M):	1813.15 ;	loss: 0.3873
Total trained pairs (M):	1813.60 ;	loss: 0.3881
Total trained pairs (M):	1814.05 ;	loss: 0.3871
Total trained pairs (M):	1814.48 ;	loss: 0.3867
Total trained pairs (M):	1814.92 ;	loss: 0.3863
Total trained pairs (M):	1815.36 ;	loss: 0.3913
Total trained pairs (M):	1815.79 ;	loss: 0.3922
Total trained pairs (M):	1816.22 ;	loss: 0.3904
Total trained pairs (M):	1816.64 ;	loss: 0.3921
Total trained pairs (M):	1817.06 ;	loss: 0.3958
Total trained pairs (M):	1817.50 ;	loss: 0.3979
Total trained pairs (M):	1817.94 ;	loss: 0.4078
Total trained pairs (M):	1818.38 ;	loss: 0.4089
Total trained pairs (M):	1818.83 ;	loss: 0.4115
Total trained pairs (M):	1819.28 ;	loss: 0.4110
Epoch 9 =====		
Total trained pairs (M):	1819.79 ;	loss: 0.5513
Total trained pairs (M):	1820.32 ;	loss: 0.5421
Total trained pairs (M):	1820.84 ;	loss: 0.5265
Total trained pairs (M):	1821.36 ;	loss: 0.5170
Total trained pairs (M):	1821.87 ;	loss: 0.5075
Total trained pairs (M):	1822.38 ;	loss: 0.4990
Total trained pairs (M):	1822.90 ;	loss: 0.4937
Total trained pairs (M):	1823.40 ;	loss: 0.4886
Total trained pairs (M):	1823.90 ;	loss: 0.4811
Total trained pairs (M):	1824.40 ;	loss: 0.4727
Total trained pairs (M):	1824.90 ;	loss: 0.4686
Total trained pairs (M):	1825.40 ;	loss: 0.4620
Total trained pairs (M):	1825.90 ;	loss: 0.4593
Total trained pairs (M):	1826.40 ;	loss: 0.4559
Total trained pairs (M):	1826.89 ;	loss: 0.4494
Total trained pairs (M):	1827.38 ;	loss: 0.4446
Total trained pairs (M):	1827.86 ;	loss: 0.4414
Total trained pairs (M):	1828.34 ;	loss: 0.4384
Total trained pairs (M):	1828.82 ;	loss: 0.4346
Total trained pairs (M):	1829.30 ;	loss: 0.4314
Total trained pairs (M):	1829.78 ;	loss: 0.4262

Total trained pairs (M):	1830.26 ;	loss: 0.4233
Total trained pairs (M):	1830.73 ;	loss: 0.4187
Total trained pairs (M):	1831.21 ;	loss: 0.4184
Total trained pairs (M):	1831.69 ;	loss: 0.4153
Total trained pairs (M):	1832.17 ;	loss: 0.4097
Total trained pairs (M):	1832.66 ;	loss: 0.4058
Total trained pairs (M):	1833.12 ;	loss: 0.3942
Total trained pairs (M):	1833.59 ;	loss: 0.3923
Total trained pairs (M):	1834.06 ;	loss: 0.3891
Total trained pairs (M):	1834.54 ;	loss: 0.3876
Total trained pairs (M):	1835.01 ;	loss: 0.3861
Total trained pairs (M):	1835.49 ;	loss: 0.3832
Total trained pairs (M):	1835.98 ;	loss: 0.3800
Total trained pairs (M):	1836.47 ;	loss: 0.3793
Total trained pairs (M):	1836.95 ;	loss: 0.3765
Total trained pairs (M):	1837.43 ;	loss: 0.3747
Total trained pairs (M):	1837.91 ;	loss: 0.3724
Total trained pairs (M):	1838.38 ;	loss: 0.3689
Total trained pairs (M):	1838.85 ;	loss: 0.3680
Total trained pairs (M):	1839.33 ;	loss: 0.3652
Total trained pairs (M):	1839.81 ;	loss: 0.3573
Total trained pairs (M):	1840.29 ;	loss: 0.3542
Total trained pairs (M):	1840.77 ;	loss: 0.3521
Total trained pairs (M):	1841.26 ;	loss: 0.3501
Total trained pairs (M):	1841.74 ;	loss: 0.3487
Total trained pairs (M):	1842.22 ;	loss: 0.3462
Total trained pairs (M):	1842.70 ;	loss: 0.3459
Total trained pairs (M):	1843.18 ;	loss: 0.3448
Total trained pairs (M):	1843.66 ;	loss: 0.3412
Total trained pairs (M):	1844.15 ;	loss: 0.3397
Total trained pairs (M):	1844.64 ;	loss: 0.3379
Total trained pairs (M):	1845.13 ;	loss: 0.3367
Total trained pairs (M):	1845.62 ;	loss: 0.3345
Total trained pairs (M):	1846.10 ;	loss: 0.3318
Total trained pairs (M):	1846.60 ;	loss: 0.3304
Total trained pairs (M):	1847.12 ;	loss: 0.3323
Total trained pairs (M):	1847.65 ;	loss: 0.3330
Total trained pairs (M):	1848.17 ;	loss: 0.3319
Total trained pairs (M):	1848.69 ;	loss: 0.3301
Total trained pairs (M):	1849.21 ;	loss: 0.3277
Total trained pairs (M):	1849.72 ;	loss: 0.3276
Total trained pairs (M):	1850.23 ;	loss: 0.3255
Total trained pairs (M):	1850.74 ;	loss: 0.3233
Total trained pairs (M):	1851.23 ;	loss: 0.3207
Total trained pairs (M):	1851.72 ;	loss: 0.3190
Total trained pairs (M):	1852.20 ;	loss: 0.3176
Total trained pairs (M):	1852.69 ;	loss: 0.3159
Total trained pairs (M):	1853.18 ;	loss: 0.3156
Total trained pairs (M):	1853.67 ;	loss: 0.3145
Total trained pairs (M):	1854.15 ;	loss: 0.3129
Total trained pairs (M):	1854.65 ;	loss: 0.3163
Total trained pairs (M):	1855.15 ;	loss: 0.3141
Total trained pairs (M):	1855.64 ;	loss: 0.3131
Total trained pairs (M):	1856.13 ;	loss: 0.3110
Total trained pairs (M):	1856.63 ;	loss: 0.3118
Total trained pairs (M):	1857.14 ;	loss: 0.3145
Total trained pairs (M):	1857.63 ;	loss: 0.3143
Total trained pairs (M):	1858.12 ;	loss: 0.3139
Total trained pairs (M):	1858.63 ;	loss: 0.3161

Total trained pairs (M):	1859.14 ;	loss: 0.3147
Total trained pairs (M):	1859.65 ;	loss: 0.3154
Total trained pairs (M):	1860.18 ;	loss: 0.3148
Total trained pairs (M):	1860.69 ;	loss: 0.3143
Total trained pairs (M):	1861.21 ;	loss: 0.3137
Total trained pairs (M):	1861.72 ;	loss: 0.3117
Total trained pairs (M):	1862.25 ;	loss: 0.3164
Total trained pairs (M):	1862.79 ;	loss: 0.3176
Total trained pairs (M):	1863.33 ;	loss: 0.3154
Total trained pairs (M):	1863.87 ;	loss: 0.3166
Total trained pairs (M):	1864.41 ;	loss: 0.3149
Total trained pairs (M):	1864.96 ;	loss: 0.3152
Total trained pairs (M):	1865.52 ;	loss: 0.3148
Total trained pairs (M):	1866.08 ;	loss: 0.3142
Total trained pairs (M):	1866.63 ;	loss: 0.3127
Total trained pairs (M):	1867.19 ;	loss: 0.3133
Total trained pairs (M):	1867.75 ;	loss: 0.3130
Total trained pairs (M):	1868.30 ;	loss: 0.3118
Total trained pairs (M):	1868.86 ;	loss: 0.3112
Total trained pairs (M):	1869.37 ;	loss: 0.3133
Total trained pairs (M):	1869.89 ;	loss: 0.3100
Total trained pairs (M):	1870.41 ;	loss: 0.3142
Total trained pairs (M):	1870.92 ;	loss: 0.3131
Total trained pairs (M):	1871.43 ;	loss: 0.3111
Total trained pairs (M):	1871.95 ;	loss: 0.3113
Total trained pairs (M):	1872.46 ;	loss: 0.3100
Total trained pairs (M):	1872.97 ;	loss: 0.3095
Total trained pairs (M):	1873.48 ;	loss: 0.3088
Total trained pairs (M):	1873.99 ;	loss: 0.3089
Total trained pairs (M):	1874.49 ;	loss: 0.3110
Total trained pairs (M):	1875.00 ;	loss: 0.3105
Total trained pairs (M):	1875.51 ;	loss: 0.3090
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Total trained pairs (M):	1876.53 ;	loss: 0.3085
Total trained pairs (M):	1877.05 ;	loss: 0.3079
Total trained pairs (M):	1877.56 ;	loss: 0.3083
Total trained pairs (M):	1878.08 ;	loss: 0.3087
Total trained pairs (M):	1878.61 ;	loss: 0.3065
Total trained pairs (M):	1879.13 ;	loss: 0.3071
Total trained pairs (M):	1879.66 ;	loss: 0.3078
Total trained pairs (M):	1880.19 ;	loss: 0.3067
Total trained pairs (M):	1880.72 ;	loss: 0.3062
Total trained pairs (M):	1881.24 ;	loss: 0.3022
Total trained pairs (M):	1881.77 ;	loss: 0.3027
Total trained pairs (M):	1882.31 ;	loss: 0.3029
Total trained pairs (M):	1882.83 ;	loss: 0.3049
Total trained pairs (M):	1883.35 ;	loss: 0.3043
Total trained pairs (M):	1883.88 ;	loss: 0.3033
Total trained pairs (M):	1884.40 ;	loss: 0.3034
Total trained pairs (M):	1884.92 ;	loss: 0.3045
Total trained pairs (M):	1885.45 ;	loss: 0.3034
Total trained pairs (M):	1885.97 ;	loss: 0.3020
Total trained pairs (M):	1886.48 ;	loss: 0.3028
Total trained pairs (M):	1887.00 ;	loss: 0.3011
Total trained pairs (M):	1887.51 ;	loss: 0.3015
Total trained pairs (M):	1888.02 ;	loss: 0.2991
Total trained pairs (M):	1888.54 ;	loss: 0.2986
Total trained pairs (M):	1889.06 ;	loss: 0.3011
Total trained pairs (M):	1889.59 ;	loss: 0.2996

Total trained pairs (M):	1890.12 ;	loss: 0.2990
Total trained pairs (M):	1890.65 ;	loss: 0.2996
Total trained pairs (M):	1891.17 ;	loss: 0.2997
Total trained pairs (M):	1891.70 ;	loss: 0.3037
Total trained pairs (M):	1892.23 ;	loss: 0.3049
Total trained pairs (M):	1892.77 ;	loss: 0.3046
Total trained pairs (M):	1893.30 ;	loss: 0.3033
Total trained pairs (M):	1893.84 ;	loss: 0.3024
Total trained pairs (M):	1894.38 ;	loss: 0.3008
Total trained pairs (M):	1894.91 ;	loss: 0.2996
Total trained pairs (M):	1895.45 ;	loss: 0.2993
Total trained pairs (M):	1895.97 ;	loss: 0.2992
Total trained pairs (M):	1896.50 ;	loss: 0.2983
Total trained pairs (M):	1897.03 ;	loss: 0.2981
Total trained pairs (M):	1897.56 ;	loss: 0.2976
Total trained pairs (M):	1898.09 ;	loss: 0.2964
Total trained pairs (M):	1898.61 ;	loss: 0.2986
Total trained pairs (M):	1899.11 ;	loss: 0.2992
Total trained pairs (M):	1899.60 ;	loss: 0.2980
Total trained pairs (M):	1900.09 ;	loss: 0.2968
Total trained pairs (M):	1900.58 ;	loss: 0.2971
Total trained pairs (M):	1901.07 ;	loss: 0.2948
Total trained pairs (M):	1901.55 ;	loss: 0.2935
Total trained pairs (M):	1902.05 ;	loss: 0.2953
Total trained pairs (M):	1902.56 ;	loss: 0.2975
Total trained pairs (M):	1903.07 ;	loss: 0.2958
Total trained pairs (M):	1903.59 ;	loss: 0.2949
Total trained pairs (M):	1904.11 ;	loss: 0.2958
Total trained pairs (M):	1904.62 ;	loss: 0.2956
Total trained pairs (M):	1905.14 ;	loss: 0.2948
Total trained pairs (M):	1905.66 ;	loss: 0.2933
Total trained pairs (M):	1906.17 ;	loss: 0.2930
Total trained pairs (M):	1906.68 ;	loss: 0.2944
Total trained pairs (M):	1907.18 ;	loss: 0.2933
Total trained pairs (M):	1907.69 ;	loss: 0.2939
Total trained pairs (M):	1908.19 ;	loss: 0.2918
Total trained pairs (M):	1908.68 ;	loss: 0.2925
Total trained pairs (M):	1909.16 ;	loss: 0.2913
Total trained pairs (M):	1909.64 ;	loss: 0.2920
Total trained pairs (M):	1910.11 ;	loss: 0.2910
Total trained pairs (M):	1910.58 ;	loss: 0.2921
Total trained pairs (M):	1911.04 ;	loss: 0.2920
Total trained pairs (M):	1911.49 ;	loss: 0.2918
Total trained pairs (M):	1911.93 ;	loss: 0.2922
Total trained pairs (M):	1912.38 ;	loss: 0.2915
Total trained pairs (M):	1912.82 ;	loss: 0.2895
Total trained pairs (M):	1913.26 ;	loss: 0.2885
Total trained pairs (M):	1913.68 ;	loss: 0.2908
Total trained pairs (M):	1914.11 ;	loss: 0.2941
Total trained pairs (M):	1914.53 ;	loss: 0.2906
Total trained pairs (M):	1914.95 ;	loss: 0.2921
Total trained pairs (M):	1915.38 ;	loss: 0.2986
Total trained pairs (M):	1915.80 ;	loss: 0.2991
Total trained pairs (M):	1916.22 ;	loss: 0.3015
Total trained pairs (M):	1916.64 ;	loss: 0.3023
Total trained pairs (M):	1917.06 ;	loss: 0.3003
Total trained pairs (M):	1917.45 ;	loss: 0.3038
Total trained pairs (M):	1917.87 ;	loss: 0.3043
Total trained pairs (M):	1918.30 ;	loss: 0.3073

Total trained pairs (M):	1918.74 ;	loss: 0.3138
Total trained pairs (M):	1919.19 ;	loss: 0.3187
Total trained pairs (M):	1919.65 ;	loss: 0.3179
Total trained pairs (M):	1920.10 ;	loss: 0.3176
Total trained pairs (M):	1920.55 ;	loss: 0.3169
Total trained pairs (M):	1920.99 ;	loss: 0.3158
Total trained pairs (M):	1921.44 ;	loss: 0.3165
Total trained pairs (M):	1921.88 ;	loss: 0.3124
Total trained pairs (M):	1922.32 ;	loss: 0.3128
Total trained pairs (M):	1922.77 ;	loss: 0.3123
Total trained pairs (M):	1923.22 ;	loss: 0.3125
Total trained pairs (M):	1923.67 ;	loss: 0.3127
Total trained pairs (M):	1924.11 ;	loss: 0.3133
Total trained pairs (M):	1924.57 ;	loss: 0.3134
Total trained pairs (M):	1925.02 ;	loss: 0.3104
Total trained pairs (M):	1925.46 ;	loss: 0.3131
Total trained pairs (M):	1925.91 ;	loss: 0.3136
Total trained pairs (M):	1926.36 ;	loss: 0.3102
Total trained pairs (M):	1926.80 ;	loss: 0.3138
Total trained pairs (M):	1927.23 ;	loss: 0.3119
Total trained pairs (M):	1927.68 ;	loss: 0.3138
Total trained pairs (M):	1928.12 ;	loss: 0.3134
Total trained pairs (M):	1928.56 ;	loss: 0.3129
Total trained pairs (M):	1929.00 ;	loss: 0.3104
Total trained pairs (M):	1929.44 ;	loss: 0.3107
Total trained pairs (M):	1929.88 ;	loss: 0.3111
Total trained pairs (M):	1930.32 ;	loss: 0.3134
Total trained pairs (M):	1930.76 ;	loss: 0.3119
Total trained pairs (M):	1931.21 ;	loss: 0.3123
Total trained pairs (M):	1931.65 ;	loss: 0.3102
Total trained pairs (M):	1932.10 ;	loss: 0.3101
Total trained pairs (M):	1932.54 ;	loss: 0.3114
Total trained pairs (M):	1932.98 ;	loss: 0.3117
Total trained pairs (M):	1933.43 ;	loss: 0.3137
Total trained pairs (M):	1933.88 ;	loss: 0.3125
Total trained pairs (M):	1934.34 ;	loss: 0.3154
Total trained pairs (M):	1934.79 ;	loss: 0.3146
Total trained pairs (M):	1935.26 ;	loss: 0.3148
Total trained pairs (M):	1935.72 ;	loss: 0.3167
Total trained pairs (M):	1936.18 ;	loss: 0.3174
Total trained pairs (M):	1936.64 ;	loss: 0.3158
Total trained pairs (M):	1937.10 ;	loss: 0.3148
Total trained pairs (M):	1937.55 ;	loss: 0.3155
Total trained pairs (M):	1938.00 ;	loss: 0.3143
Total trained pairs (M):	1938.43 ;	loss: 0.3164
Total trained pairs (M):	1938.87 ;	loss: 0.3186
Total trained pairs (M):	1939.31 ;	loss: 0.3183
Total trained pairs (M):	1939.74 ;	loss: 0.3172
Total trained pairs (M):	1940.18 ;	loss: 0.3176
Total trained pairs (M):	1940.62 ;	loss: 0.3158
Total trained pairs (M):	1941.06 ;	loss: 0.3151
Total trained pairs (M):	1941.53 ;	loss: 0.3297
Total trained pairs (M):	1942.00 ;	loss: 0.3272
Total trained pairs (M):	1942.48 ;	loss: 0.3255
Total trained pairs (M):	1942.95 ;	loss: 0.3272
Total trained pairs (M):	1943.43 ;	loss: 0.3276
Total trained pairs (M):	1943.91 ;	loss: 0.3261
Total trained pairs (M):	1944.38 ;	loss: 0.3255
Total trained pairs (M):	1944.86 ;	loss: 0.3251

Total trained pairs (M):	1945.33 ;	loss: 0.3227
Total trained pairs (M):	1945.80 ;	loss: 0.3233
Total trained pairs (M):	1946.28 ;	loss: 0.3214
Total trained pairs (M):	1946.75 ;	loss: 0.3211
Total trained pairs (M):	1947.23 ;	loss: 0.3192
Total trained pairs (M):	1947.71 ;	loss: 0.3211
Total trained pairs (M):	1948.16 ;	loss: 0.3229
Total trained pairs (M):	1948.62 ;	loss: 0.3207
Total trained pairs (M):	1949.08 ;	loss: 0.3190
Total trained pairs (M):	1949.55 ;	loss: 0.3211
Total trained pairs (M):	1950.01 ;	loss: 0.3231
Total trained pairs (M):	1950.48 ;	loss: 0.3194
Total trained pairs (M):	1950.95 ;	loss: 0.3211
Total trained pairs (M):	1951.43 ;	loss: 0.3222
Total trained pairs (M):	1951.91 ;	loss: 0.3194
Total trained pairs (M):	1952.40 ;	loss: 0.3187
Total trained pairs (M):	1952.90 ;	loss: 0.3189
Total trained pairs (M):	1953.40 ;	loss: 0.3191
Total trained pairs (M):	1953.91 ;	loss: 0.3181
Total trained pairs (M):	1954.42 ;	loss: 0.3202
Total trained pairs (M):	1954.93 ;	loss: 0.3191
Total trained pairs (M):	1955.44 ;	loss: 0.3182
Total trained pairs (M):	1955.95 ;	loss: 0.3165
Total trained pairs (M):	1956.47 ;	loss: 0.3162
Total trained pairs (M):	1956.98 ;	loss: 0.3141
Total trained pairs (M):	1957.49 ;	loss: 0.3136
Total trained pairs (M):	1958.00 ;	loss: 0.3132
Total trained pairs (M):	1958.52 ;	loss: 0.3090
Total trained pairs (M):	1959.04 ;	loss: 0.3095
Total trained pairs (M):	1959.55 ;	loss: 0.3105
Total trained pairs (M):	1960.06 ;	loss: 0.3094
Total trained pairs (M):	1960.57 ;	loss: 0.3078
Total trained pairs (M):	1961.08 ;	loss: 0.3101
Total trained pairs (M):	1961.58 ;	loss: 0.3108
Total trained pairs (M):	1962.08 ;	loss: 0.3090
Total trained pairs (M):	1962.58 ;	loss: 0.3095
Total trained pairs (M):	1963.07 ;	loss: 0.3083
Total trained pairs (M):	1963.57 ;	loss: 0.3087
Total trained pairs (M):	1964.07 ;	loss: 0.3070
Total trained pairs (M):	1964.54 ;	loss: 0.3096
Total trained pairs (M):	1965.03 ;	loss: 0.3135
Total trained pairs (M):	1965.49 ;	loss: 0.3147
Total trained pairs (M):	1965.94 ;	loss: 0.3131
Total trained pairs (M):	1966.39 ;	loss: 0.3132
Total trained pairs (M):	1966.84 ;	loss: 0.3123
Total trained pairs (M):	1967.29 ;	loss: 0.3094
Total trained pairs (M):	1967.74 ;	loss: 0.3104
Total trained pairs (M):	1968.20 ;	loss: 0.3080
Total trained pairs (M):	1968.65 ;	loss: 0.3084
Total trained pairs (M):	1969.11 ;	loss: 0.3087
Total trained pairs (M):	1969.57 ;	loss: 0.3092
Total trained pairs (M):	1970.03 ;	loss: 0.3076
Total trained pairs (M):	1970.50 ;	loss: 0.3115
Total trained pairs (M):	1970.96 ;	loss: 0.3098
Total trained pairs (M):	1971.42 ;	loss: 0.3071
Total trained pairs (M):	1971.89 ;	loss: 0.3099
Total trained pairs (M):	1972.35 ;	loss: 0.3082
Total trained pairs (M):	1972.82 ;	loss: 0.3102
Total trained pairs (M):	1973.30 ;	loss: 0.3108

Total trained pairs (M):	1973.77 ;	loss: 0.3113
Total trained pairs (M):	1974.25 ;	loss: 0.3115
Total trained pairs (M):	1974.72 ;	loss: 0.3096
Total trained pairs (M):	1975.19 ;	loss: 0.3102
Total trained pairs (M):	1975.67 ;	loss: 0.3099
Total trained pairs (M):	1976.15 ;	loss: 0.3082
Total trained pairs (M):	1976.62 ;	loss: 0.3072
Total trained pairs (M):	1977.10 ;	loss: 0.3049
Total trained pairs (M):	1977.58 ;	loss: 0.3092
Total trained pairs (M):	1978.05 ;	loss: 0.3080
Total trained pairs (M):	1978.52 ;	loss: 0.3069
Total trained pairs (M):	1979.00 ;	loss: 0.3069
Total trained pairs (M):	1979.47 ;	loss: 0.3066
Total trained pairs (M):	1979.94 ;	loss: 0.3056
Total trained pairs (M):	1980.43 ;	loss: 0.3051
Total trained pairs (M):	1980.90 ;	loss: 0.3057
Total trained pairs (M):	1981.38 ;	loss: 0.3054
Total trained pairs (M):	1981.84 ;	loss: 0.3059
Total trained pairs (M):	1982.30 ;	loss: 0.3057
Total trained pairs (M):	1982.77 ;	loss: 0.3132
Total trained pairs (M):	1983.24 ;	loss: 0.3133
Total trained pairs (M):	1983.72 ;	loss: 0.3139
Total trained pairs (M):	1984.19 ;	loss: 0.3128
Total trained pairs (M):	1984.66 ;	loss: 0.3126
Total trained pairs (M):	1985.13 ;	loss: 0.3137
Total trained pairs (M):	1985.60 ;	loss: 0.3134
Total trained pairs (M):	1986.07 ;	loss: 0.3120
Total trained pairs (M):	1986.54 ;	loss: 0.3124
Total trained pairs (M):	1987.01 ;	loss: 0.3120
Total trained pairs (M):	1987.48 ;	loss: 0.3144
Total trained pairs (M):	1987.95 ;	loss: 0.3149
Total trained pairs (M):	1988.44 ;	loss: 0.3152
Total trained pairs (M):	1988.92 ;	loss: 0.3168
Total trained pairs (M):	1989.36 ;	loss: 0.3189
Total trained pairs (M):	1989.81 ;	loss: 0.3197
Total trained pairs (M):	1990.28 ;	loss: 0.3241
Total trained pairs (M):	1990.73 ;	loss: 0.3255
Total trained pairs (M):	1991.19 ;	loss: 0.3243
Total trained pairs (M):	1991.64 ;	loss: 0.3230
Total trained pairs (M):	1992.09 ;	loss: 0.3226
Total trained pairs (M):	1992.55 ;	loss: 0.3205
Total trained pairs (M):	1993.00 ;	loss: 0.3194
Total trained pairs (M):	1993.46 ;	loss: 0.3195
Total trained pairs (M):	1993.92 ;	loss: 0.3198
Total trained pairs (M):	1994.37 ;	loss: 0.3182
Total trained pairs (M):	1994.83 ;	loss: 0.3214
Total trained pairs (M):	1995.29 ;	loss: 0.3206
Total trained pairs (M):	1995.75 ;	loss: 0.3214
Total trained pairs (M):	1996.20 ;	loss: 0.3194
Total trained pairs (M):	1996.65 ;	loss: 0.3207
Total trained pairs (M):	1997.10 ;	loss: 0.3237
Total trained pairs (M):	1997.55 ;	loss: 0.3234
Total trained pairs (M):	1997.99 ;	loss: 0.3263
Total trained pairs (M):	1998.44 ;	loss: 0.3262
Total trained pairs (M):	1998.87 ;	loss: 0.3250
Total trained pairs (M):	1999.30 ;	loss: 0.3258
Total trained pairs (M):	1999.72 ;	loss: 0.3293
Total trained pairs (M):	2000.14 ;	loss: 0.3302
Total trained pairs (M):	2000.55 ;	loss: 0.3292

Total trained pairs (M):	2000.96 ;	loss: 0.3303
Total trained pairs (M):	2001.36 ;	loss: 0.3291
Total trained pairs (M):	2001.77 ;	loss: 0.3338
Total trained pairs (M):	2002.18 ;	loss: 0.3331
Total trained pairs (M):	2002.58 ;	loss: 0.3330
Total trained pairs (M):	2002.98 ;	loss: 0.3305
Total trained pairs (M):	2003.39 ;	loss: 0.3289
Total trained pairs (M):	2003.79 ;	loss: 0.3279
Total trained pairs (M):	2004.20 ;	loss: 0.3332
Total trained pairs (M):	2004.60 ;	loss: 0.3329
Total trained pairs (M):	2005.01 ;	loss: 0.3356
Total trained pairs (M):	2005.42 ;	loss: 0.3320
Total trained pairs (M):	2005.84 ;	loss: 0.3325
Total trained pairs (M):	2006.25 ;	loss: 0.3345
Total trained pairs (M):	2006.66 ;	loss: 0.3398
Total trained pairs (M):	2007.07 ;	loss: 0.3397
Total trained pairs (M):	2007.48 ;	loss: 0.3473
Total trained pairs (M):	2007.90 ;	loss: 0.3466
Total trained pairs (M):	2008.32 ;	loss: 0.3466
Total trained pairs (M):	2008.74 ;	loss: 0.3464
Total trained pairs (M):	2009.16 ;	loss: 0.3499
Total trained pairs (M):	2009.59 ;	loss: 0.3526
Total trained pairs (M):	2010.01 ;	loss: 0.3546
Total trained pairs (M):	2010.44 ;	loss: 0.3575
Total trained pairs (M):	2010.86 ;	loss: 0.3543
Total trained pairs (M):	2011.29 ;	loss: 0.3567
Total trained pairs (M):	2011.72 ;	loss: 0.3562
Total trained pairs (M):	2012.16 ;	loss: 0.3618
Total trained pairs (M):	2012.61 ;	loss: 0.3677
Total trained pairs (M):	2013.06 ;	loss: 0.3664
Total trained pairs (M):	2013.51 ;	loss: 0.3642
Total trained pairs (M):	2013.95 ;	loss: 0.3676
Total trained pairs (M):	2014.39 ;	loss: 0.3648
Total trained pairs (M):	2014.84 ;	loss: 0.3802
Total trained pairs (M):	2015.29 ;	loss: 0.3857
Total trained pairs (M):	2015.74 ;	loss: 0.3846
Total trained pairs (M):	2016.19 ;	loss: 0.3849
Total trained pairs (M):	2016.63 ;	loss: 0.3838
Total trained pairs (M):	2017.06 ;	loss: 0.3843
Total trained pairs (M):	2017.50 ;	loss: 0.3903
Total trained pairs (M):	2017.93 ;	loss: 0.3903
Total trained pairs (M):	2018.36 ;	loss: 0.3893
Total trained pairs (M):	2018.78 ;	loss: 0.3895
Total trained pairs (M):	2019.21 ;	loss: 0.3934
Total trained pairs (M):	2019.64 ;	loss: 0.3964
Total trained pairs (M):	2020.08 ;	loss: 0.4058
Total trained pairs (M):	2020.52 ;	loss: 0.4072
Total trained pairs (M):	2020.97 ;	loss: 0.4100
Total trained pairs (M):	2021.42 ;	loss: 0.4097

4.6 Transform the embedding to a table

Ready to translate the model you trained into the embedding DataFrame?

```
In [22]: def embedding2df(embedding_layer, tokenmap_reverse):
          return pd.DataFrame(embedding_layer.get_weights()[0],
                              tokenmap_reverse.values()).drop("_unknown_", errors='ignore')
```

```
skip = embedding2df(model.layers[2], tokenmap_reverse)
```

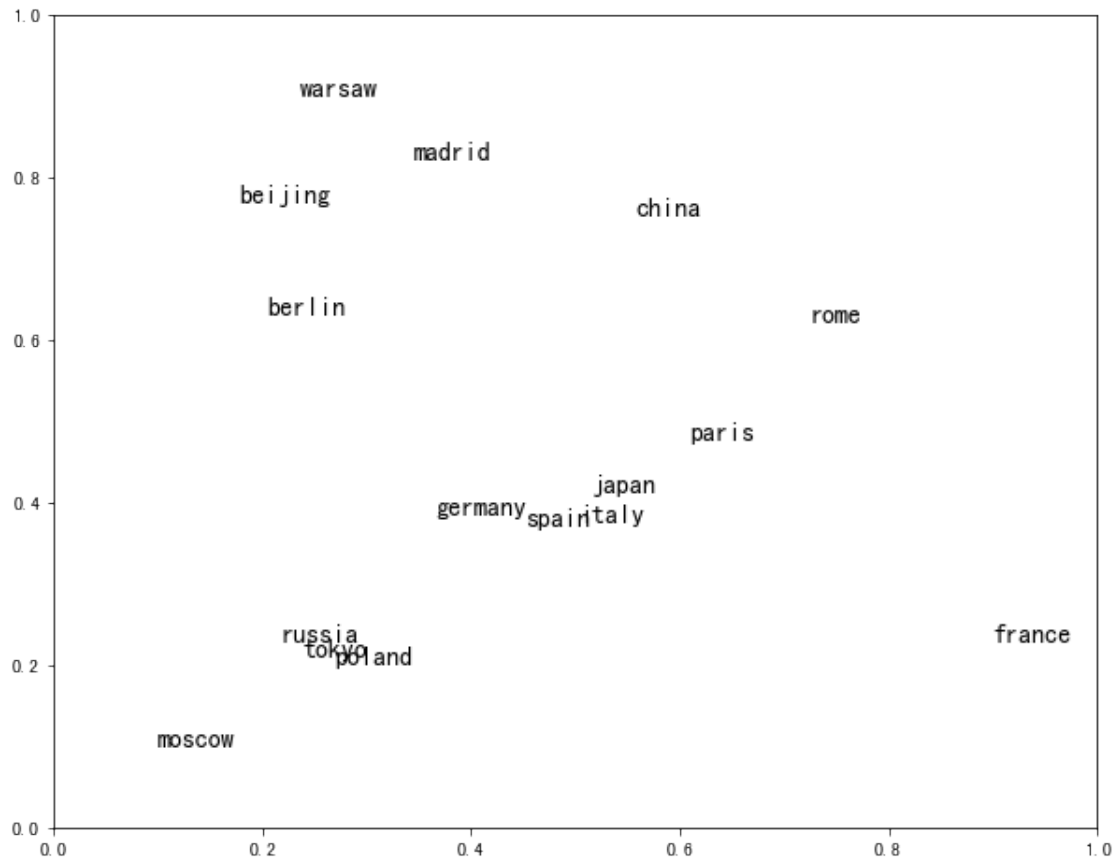
4.7 Test your trained embedding

Use the embedding you just trained, repeat the exploration you did for Section 3.

```
In [23]: find_nearest_with_vector(skip.T, skip.T['king']-skip.T['male']+skip.T['female'])
        words = ['china', 'beijing', 'russia', 'moscow', 'poland', 'warsaw', 'japan', 'tokyo',
                  'france', 'paris', 'germany', 'berlin', 'italy', 'rome', 'spain', 'madrid']

        plot_words_embedding(skip.T, words)
        print(find_nearest_with_vector(skip.T, skip.T['china']+skip.T['capital']))
        print(find_nearest_with_vector(skip.T, skip.T['king']-skip.T['male']+skip.T['female']))
        print(find_nearest(skip.T, 'china'))
        print(find_nearest(glove, '8'))
```

```
capital      2.888160
existing      3.315533
native       3.351735
dish         3.353260
somewhere    3.368453
dtype: float64
female       5.069273
strikes      5.422312
episode      5.497815
enter        5.530743
escaped      5.545122
dtype: float64
a            2.889378
dish         2.975097
existing      2.995639
representatives 3.009952
native       3.044108
dtype: float64
9    0.943478
7    0.943649
6    1.037347
5    1.111455
4    1.339804
dtype: float64
```



5 Extra

```
In [24]: #HW1, HW2
from collections import Counter
from nltk.stem import WordNetLemmatizer
from nltk import word_tokenize
from utils.hw1 import load_data
from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import CountVectorizer

data = load_data("../HW01-BAG-OF-WORDS/train.txt")
X, y = data.text, data.target
X_train, X_dev, y_train, y_dev = train_test_split(X, y, test_size=0.3)

In [25]: MAX_LENGTH=200
# Yes! it is a good practice to do data processing outside the ML model
wnet = WordNetLemmatizer()

X_train1 = [' '.join([wnet.lemmatize(w) for w in word_tokenize(sent)]) for sent in
X_train]
vec = CountVectorizer()
vec.fit_transform(X_train1)
vocab = vec.vocabulary_
vocab['__unknown__'] = len(vocab) + 1
# Numerical encode all the words
unknown = vocab['__unknown__']
```

```

X_train2 = [[vocab.get(wnet.lemmatize(w), unknown) for w in word_tokenize(sent)] for
sent in X_train]
X_dev2 = [[vocab.get(wnet.lemmatize(w), unknown) for w in word_tokenize(sent)] for sent
in X_dev]

# Tensorflow does not handle variable length input well, let's unify all input to the
same length
def trim_X(X, max_length=100, default=vocab['__unknown__']):
    for i in range(len(X)):
        if len(X[i]) > max_length:
            X[i] = X[i][:max_length]
        elif len(X[i]) < max_length:
            X[i] = X[i] + [default] * (max_length - len(X[i]))

    return np.array(X)

X_train2 = trim_X(X_train2, MAX_LENGTH)
X_dev2 = trim_X(X_dev2, MAX_LENGTH)

```

```

In [48]: from keras.models import Sequential
from keras.layers import Embedding, Conv1D, AveragePooling1D, GlobalAveragePooling1D,
MaxPooling1D, Dense, GlobalMaxPooling1D, LSTM
from keras.regularizers import l2

model = Sequential()
embedding_layer = Embedding(input_dim=100000,
                           output_dim=100,
                           weights=[glove.T],
                           input_length=MAX_LENGTH,
                           trainable=True)

model.add(embedding_layer)
model.add(Conv1D(filters=400, kernel_size=4, activation="tanh", name="Conv1D-1"))
model.add(GlobalMaxPooling1D(name="MaxPooling1D-1"))
#model.add(LSTM(32))
model.add(Dense(1, activation="sigmoid", name="Dense-1"))
print(model.summary())

```

Layer (type)	Output Shape	Param #
embedding_13 (Embedding)	(None, 200, 100)	100000000
Conv1D-1 (Conv1D)	(None, 197, 400)	160400
MaxPooling1D-1 (GlobalMaxPoo	(None, 400)	0
Dense-1 (Dense)	(None, 1)	401
Total params: 10,160,801		
Trainable params: 10,160,801		
Non-trainable params: 0		
None		

```

In [49]: model.compile(loss="binary_crossentropy", optimizer='adam', metrics=['accuracy'])
model.fit(X_train2, y_train, epochs=20, validation_data=[X_dev2, y_dev])

```

Train on 7000 samples, validate on 3000 samples

Epoch 1/20

7000/7000 [=====] - 42s 6ms/step - loss: 0.6732 - acc: 0.5749
- val_loss: 0.6546 - val_acc: 0.5823

Epoch 2/20

7000/7000 [=====] - 41s 6ms/step - loss: 0.5060 - acc: 0.7839
- val_loss: 0.6044 - val_acc: 0.6807

```

Epoch 3/20
7000/7000 [=====] - 42s 6ms/step - loss: 0.3235 - acc: 0.9057
- val_loss: 0.6069 - val_acc: 0.6977
Epoch 4/20
7000/7000 [=====] - 39s 6ms/step - loss: 0.1588 - acc: 0.9736
- val_loss: 0.6459 - val_acc: 0.7053
Epoch 5/20
7000/7000 [=====] - 44s 6ms/step - loss: 0.0591 - acc: 0.9971
- val_loss: 0.6949 - val_acc: 0.7137
Epoch 6/20
7000/7000 [=====] - 44s 6ms/step - loss: 0.0218 - acc: 0.9997
- val_loss: 0.7290 - val_acc: 0.7217
Epoch 7/20
7000/7000 [=====] - 41s 6ms/step - loss: 0.0107 - acc: 0.9999
- val_loss: 0.7809 - val_acc: 0.7193
Epoch 8/20
7000/7000 [=====] - 39s 6ms/step - loss: 0.0068 - acc: 0.9999
- val_loss: 0.8051 - val_acc: 0.7203
Epoch 9/20
7000/7000 [=====] - 41s 6ms/step - loss: 0.0047 - acc: 0.9999
- val_loss: 0.8371 - val_acc: 0.7240
Epoch 10/20
7000/7000 [=====] - 41s 6ms/step - loss: 0.0036 - acc: 0.9999
- val_loss: 0.8573 - val_acc: 0.7273
Epoch 11/20
7000/7000 [=====] - 44s 6ms/step - loss: 0.0028 - acc: 0.9999
- val_loss: 0.8820 - val_acc: 0.7283
Epoch 12/20
7000/7000 [=====] - 43s 6ms/step - loss: 0.0023 - acc: 0.9999
- val_loss: 0.9115 - val_acc: 0.7247
Epoch 13/20
7000/7000 [=====] - 40s 6ms/step - loss: 0.0019 - acc: 0.9999
- val_loss: 0.9278 - val_acc: 0.7280
Epoch 14/20
7000/7000 [=====] - 38s 5ms/step - loss: 0.0016 - acc: 0.9999
- val_loss: 0.9504 - val_acc: 0.7250
Epoch 15/20
7000/7000 [=====] - 44s 6ms/step - loss: 0.0014 - acc: 0.9997
- val_loss: 0.9634 - val_acc: 0.7273
Epoch 16/20
7000/7000 [=====] - 44s 6ms/step - loss: 0.0012 - acc: 0.9999
- val_loss: 0.9884 - val_acc: 0.7260
Epoch 17/20
7000/7000 [=====] - 46s 7ms/step - loss: 0.0010 - acc: 0.9999
- val_loss: 1.0062 - val_acc: 0.7273
Epoch 18/20
7000/7000 [=====] - 44s 6ms/step - loss: 9.4910e-04 - acc:
0.9999 - val_loss: 1.0352 - val_acc: 0.7233
Epoch 19/20
7000/7000 [=====] - 39s 6ms/step - loss: 9.0509e-04 - acc:
0.9999 - val_loss: 1.0538 - val_acc: 0.7273
Epoch 20/20
7000/7000 [=====] - 42s 6ms/step - loss: 7.6321e-04 - acc:
0.9999 - val_loss: 1.0581 - val_acc: 0.7277

```

[49]: <keras.callbacks.History at 0x1b91067f0>

6 Final project (Not due this week)

Work with your teammates and start working on your final project proposal, think about these questions: - The problem you try to solve and the value of this problem - Some current solution to this problem, reference citation if needed - Outline your approach and the goal you want to achieve