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D:\python\python.exe D:/pyCharmWorkspace/ukg_BERT/src/lstm.py
Using Theano backend.
config: C:\Users\dryan\.keras\keras.json
backend: tensorflow was changed into theano.
in the source file: d:\python\Lib\site-packages\keraackend\load_backend.py
WARNING (theano.tensor.blas): Using NumPy C-API based implementation for BLAS functions.
entities total: 15000
relations total: 36
embedding vectors: 15036 with dim = 768
Embeddings loaded.
ID-RelationName 36 items are created.
ID-EntityName 15000 items are created.
X_train without neg samples: 204984
y_train without neg samples: 204984
Entities num: 15000
Relations num: 36
Sentences num: 52887
Valid total num: 204984
Training positive samples loaded.
Negative samples num: 204984
X_train num: 409968
y_train num: 409968
Train samples are ready!
X_test: 19293
y_test: 19293
Testing samples loaded.
Model: "bert_fine_tuning_UKGE"
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Layer (type)	Output Shape	Param #
lstm_1 (LSTM)	(None, 768)	4721664
dense_1 (Dense)	(None, 1)	769

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Total params: 4,722,433  
Trainable params: 4,722,433  
Non-trainable params: 0  
=====  
Begin training (confidence learning) ... ...  
X_train shape: (409968, 3, 768)  
y_train shape: (409968,)  
Train on 364420 samples, validate on 45548 samples  
Epoch 1/200  
- 1427s - loss: 0.0680 - mean_absolute_error: 0.1979 - val_loss: 0.0579 - val_mean_absolute_error: 0.17  
Epoch 00001: val_loss improved from inf to 0.05788, saving model to D:\pyCharmWorkspace\ukg_BERT\data\CN  
Epoch 2/200  
- 1496s - loss: 0.0518 - mean_absolute_error: 0.1611 - val_loss: 0.0525 - val_mean_absolute_error: 0.15  
Epoch 00002: val_loss improved from 0.05788 to 0.05247, saving model to D:\pyCharmWorkspace\ukg_BERT\dat  
Epoch 3/200  
- 1440s - loss: 0.0460 - mean_absolute_error: 0.1475 - val_loss: 0.0518 - val_mean_absolute_error: 0.15  
Epoch 00003: val_loss improved from 0.05247 to 0.05183, saving model to D:\pyCharmWorkspace\ukg_BERT\dat  
Epoch 4/200  
- 1330s - loss: 0.0417 - mean_absolute_error: 0.1377 - val_loss: 0.0499 - val_mean_absolute_error: 0.15  
Epoch 00004: val_loss improved from 0.05183 to 0.04989, saving model to D:\pyCharmWorkspace\ukg_BERT\dat  
Epoch 5/200  
- 1298s - loss: 0.0378 - mean_absolute_error: 0.1292 - val_loss: 0.0493 - val_mean_absolute_error: 0.14
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Epoch 00005: val_loss improved from 0.04989 to 0.04927, saving model to D:\pyCharmWorkspace\ukg_BERT\dat
Epoch 6/200
- 1295s - loss: 0.0343 - mean_absolute_error: 0.1213 - val_loss: 0.0492 - val_mean_absolute_error: 0.14

Epoch 00006: val_loss improved from 0.04927 to 0.04922, saving model to D:\pyCharmWorkspace\ukg_BERT\dat
Epoch 7/200
- 1299s - loss: 0.0312 - mean_absolute_error: 0.1144 - val_loss: 0.0499 - val_mean_absolute_error: 0.14

Epoch 00007: val_loss did not improve from 0.04922
Epoch 8/200
- 1304s - loss: 0.0283 - mean_absolute_error: 0.1080 - val_loss: 0.0515 - val_mean_absolute_error: 0.14

Epoch 00008: val_loss did not improve from 0.04922
Epoch 9/200
- 1302s - loss: 0.0258 - mean_absolute_error: 0.1023 - val_loss: 0.0504 - val_mean_absolute_error: 0.14

Epoch 00009: val_loss did not improve from 0.04922
Epoch 10/200
- 1310s - loss: 0.0235 - mean_absolute_error: 0.0969 - val_loss: 0.0507 - val_mean_absolute_error: 0.14

Epoch 00010: val_loss did not improve from 0.04922
Epoch 11/200
- 1315s - loss: 0.0215 - mean_absolute_error: 0.0924 - val_loss: 0.0514 - val_mean_absolute_error: 0.14

Epoch 00011: val_loss did not improve from 0.04922
Epoch 12/200
- 1323s - loss: 0.0198 - mean_absolute_error: 0.0883 - val_loss: 0.0522 - val_mean_absolute_error: 0.14

Epoch 00012: val_loss did not improve from 0.04922
Epoch 13/200
- 1325s - loss: 0.0182 - mean_absolute_error: 0.0843 - val_loss: 0.0538 - val_mean_absolute_error: 0.14

Epoch 00013: val_loss did not improve from 0.04922
Epoch 14/200
- 1326s - loss: 0.0168 - mean_absolute_error: 0.0809 - val_loss: 0.0536 - val_mean_absolute_error: 0.14

Epoch 00014: val_loss did not improve from 0.04922
Epoch 15/200
- 1334s - loss: 0.0156 - mean_absolute_error: 0.0779 - val_loss: 0.0531 - val_mean_absolute_error: 0.14

Epoch 00015: val_loss did not improve from 0.04922
Epoch 00015: early stopping
Train FINISHED.
Time consumed(s): 20487.59369444847
Evaluate results:
MSE, MAE = [0.0729930457055031, 0.20172813534736633]
model_e200_768d.h5

Process finished with exit code 0
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