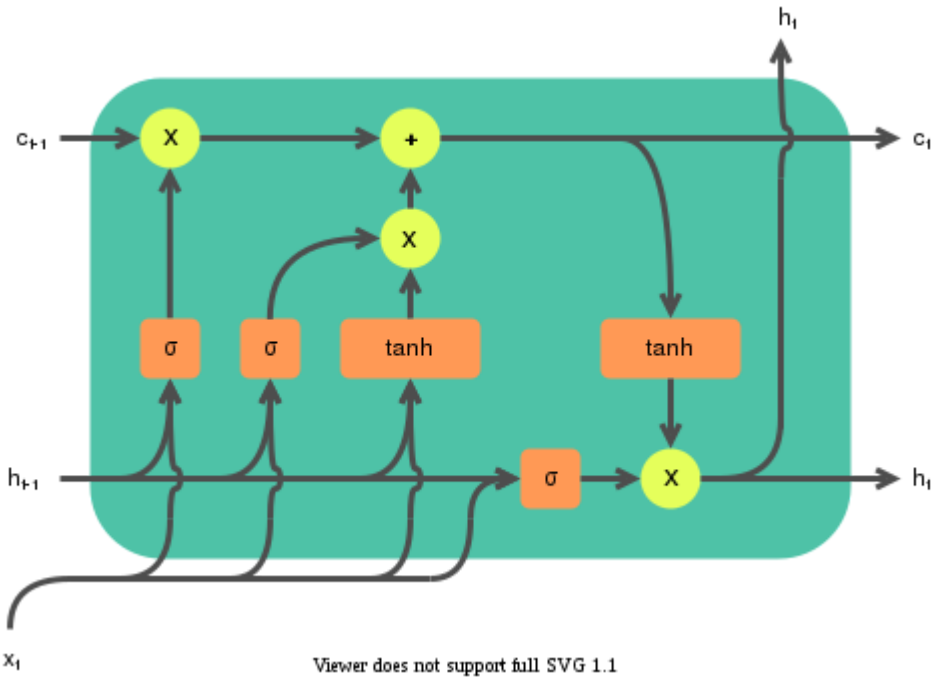


```
from __future__ import print_function

from keras.preprocessing import sequence
from keras.models import Sequential
from keras.layers import Dense, Embedding
from keras.layers import LSTM
from keras.datasets import imdb

max_features = 20000
maxlen = 80  # cut texts after this number of words (among top max_features most common words
batch_size = 32

print('Loading data...')
(x_train, y_train), (x_test, y_test) = imdb.load_data(num_words=max_features)
print(len(x_train), 'train sequences')
print(len(x_test), 'test sequences')

print('Pad sequences (samples x time)')
x_train = sequence.pad_sequences(x_train, maxlen=maxlen)
x_test = sequence.pad_sequences(x_test, maxlen=maxlen)
print('x_train shape:', x_train.shape)
print('x_test shape:', x_test.shape)

print('Build model...')
model = Sequential()
model.add(Embedding(max_features, 128))
model.add(LSTM(128, dropout=0.2, recurrent_dropout=0.2))
model.add(Dense(1, activation='sigmoid'))

# try using different optimizers and different optimizer configs
```

```
model.compile(loss='binary_crossentropy',
              optimizer='adam',
              metrics=['accuracy'])

print('Train...')
model.fit(x_train, y_train,
          batch_size=batch_size,
          epochs=15,
          validation_data=(x_test, y_test))
score, acc = model.evaluate(x_test, y_test,
                            batch_size=batch_size)
print('Test score:', score)
print('Test accuracy:', acc)
```

```
Loading data...
Downloading data from https://storage.googleapis.com/tensorflow/tf-keras-datasets/imdb.n
17465344/17464789 [==============================] - 0s 0us/step
<string>:6: VisibleDeprecationWarning: Creating an ndarray from ragged nested sequences
/usr/local/lib/python3.6/dist-packages/tensorflow/python/keras/datasets/imdb.py:159: Vis
  x_train, y_train = np.array(xs[:idx]), np.array(labels[:idx])
/usr/local/lib/python3.6/dist-packages/tensorflow/python/keras/datasets/imdb.py:160: Vis
  x_test, y_test = np.array(xs[idx:]), np.array(labels[idx:])
25000 train sequences
25000 test sequences
Pad sequences (samples x time)
x_train shape: (25000, 80)
x_test shape: (25000, 80)
Build model...
WARNING:tensorflow:Layer lstm will not use cuDNN kernel since it doesn't meet the cuDNN
Train...
Epoch 1/15
782/782 [==============================] - 272s 343ms/step - loss: 0.5184 - accuracy: 0
Epoch 2/15
782/782 [==============================] - 264s 338ms/step - loss: 0.2434 - accuracy: 0
Epoch 3/15
782/782 [==============================] - 270s 346ms/step - loss: 0.1429 - accuracy: 0
Epoch 4/15
782/782 [==============================] - 271s 347ms/step - loss: 0.0875 - accuracy: 0
Epoch 5/15
782/782 [==============================] - 272s 348ms/step - loss: 0.0555 - accuracy: 0
Epoch 6/15
782/782 [==============================] - 271s 347ms/step - loss: 0.0447 - accuracy: 0
Epoch 7/15
782/782 [==============================] - 268s 342ms/step - loss: 0.0259 - accuracy: 0
Epoch 8/15
782/782 [==============================] - 272s 348ms/step - loss: 0.0247 - accuracy: 0
Epoch 9/15
782/782 [==============================] - 268s 343ms/step - loss: 0.0275 - accuracy: 0
Epoch 10/15
782/782 [==============================] - 271s 346ms/step - loss: 0.0134 - accuracy: 0
Epoch 11/15
782/782 [==============================] - 270s 346ms/step - loss: 0.0113 - accuracy: 0
Epoch 12/15
782/782 [==============================] - 272s 347ms/step - loss: 0.0091 - accuracy: 0
Epoch 13/15
```

```
782/782 [==============================] - 266s 341ms/step - loss: 0.0117 - accuracy: 0
Epoch 14/15
782/782 [==============================] - 268s 343ms/step - loss: 0.0063 - accuracy: 0
Epoch 15/15
782/782 [==============================] - 268s 343ms/step - loss: 0.0096 - accuracy: 0
782/782 [==============================] - 18s 22ms/step - loss: 1.0379 - accuracy: 0.81
Test score: 1.0379273891448975
Test accuracy: 0.8123199939727783
```