Build a Deep learning model using LSTM layer in Keras for IMDB dataset.

```
import numpy as np
import tensorflow as tf
from tensorflow.keras.datasets import imdb
from tensorflow.keras.preprocessing.sequence import pad_sequences
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Embedding, LSTM, Dense

# Parameters
max_features = 10000  # Number of words to consider as features
maxlen = 500  # Cuts off texts after this many words (among the max_features most common words)
batch_size = 32
embedding_dim = 50
epochs = 5

# Load and preprocess the data
(x_train, y_train), (x_test, y_test) = imdb.load_data(num_words=max_features)
x_train = pad_sequences(x_train, maxlen=maxlen)
x_test = pad_sequences(x_test, maxlen=maxlen)

# Define the model
model = Sequential()
model.add(Embedding(max_features, embedding_dim, input_length=maxlen))
model.add(LSTM(32))  # You can adjust the number of LSTM units as needed
model.add(Dense(1, activation='sigmoid'))

# Compile the model
model.compile(optimizer='rmsprop', loss='binary_crossentropy', metrics=['accuracy'])

# Train the model
model.fit(x_train, y_train, epochs=epochs, batch_size=batch_size, validation_split=0.2)

# Evaluate the model
loss, accuracy = model.evaluate(x_test, y_test)
print(f'Test accuracy: {accuracy * 100:.2f}%')
```

```
Downloading data from https://storage.googleapis.com/tensorflow/tf-keras-datasets/imdb.npz
17464789/17464789 [==============================] - 0s 0us/step
Epoch 1/5
625/625 [==============================] - 118s 184ms/step - loss: 0.4516 - accuracy: 0.7825 - val_loss: 0.3066 - val_accuracy: 0.8730
Epoch 2/5
625/625 [==============================] - 113s 181ms/step - loss: 0.2794 - accuracy: 0.8929 - val_loss: 0.2917 - val_accuracy: 0.8854
Epoch 3/5
625/625 [==============================] - 108s 173ms/step - loss: 0.2357 - accuracy: 0.9110 - val_loss: 0.3252 - val_accuracy: 0.8594
Epoch 4/5
625/625 [==============================] - 113s 181ms/step - loss: 0.2028 - accuracy: 0.9262 - val_loss: 0.3241 - val_accuracy: 0.8840
Epoch 5/5
625/625 [==============================] - 107s 172ms/step - loss: 0.1772 - accuracy: 0.9366 - val_loss: 0.3072 - val_accuracy: 0.8854
782/782 [==============================] - 35s 44ms/step - loss: 0.3402 - accuracy: 0.8762
Test accuracy: 87.62%
```