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In [1]: 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, GRU, Dense

np.random.seed(0)
tf.random.set_seed(0)

num_words = 10000 # Only consider the top 10,000 most common words
max_sequence_length = 100 # Limit the sequence length to 100 words

(x_train, y_train), (x_test, y_test) = imdb.load_data(num_words=num_words)
x_train = pad_sequences(x_train, maxlen=max_sequence_length)
x_test = pad_sequences(x_test, maxlen=max_sequence_length)

model = Sequential()
model.add(Embedding(input_dim=num_words, output_dim=32, input_length=max_sequence_length))
model.add(GRU(units=32))
model.add(Dense(units=1, activation='sigmoid'))

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

batch_size = 64
epochs = 5
model.fit(x_train, y_train, batch_size=batch_size, epochs=epochs, validation_split=0.2)
loss, accuracy = model.evaluate(x_test, y_test)
print(f"Test loss: {loss:.4f}, Test accuracy: {accuracy:.4f}")
```

C:\Users\pronn\anaconda3\lib\site-packages\scipy_init_.py:155: UserWarning: A NumPy version >=1.18.5 and <1.25.0 is required for this version of SciPy (detected version 1.26.0
warnings.warn(f"A NumPy version >={np_minversion} and <{np_maxversion}")

Downloading data from <https://storage.googleapis.com/tensorflow/tf-keras-datasets/imdb.npz>
(<https://storage.googleapis.com/tensorflow/tf-keras-datasets/imdb.npz>)

17464789/17464789 [=====] - 3s 0us/step

Epoch 1/5

313/313 [=====] - 28s 77ms/step - loss: 0.4685 - accuracy: 0.7640
- val_loss: 0.3701 - val_accuracy: 0.8356

Epoch 2/5

313/313 [=====] - 24s 75ms/step - loss: 0.2715 - accuracy: 0.8912
- val_loss: 0.3595 - val_accuracy: 0.8450

Epoch 3/5

313/313 [=====] - 24s 78ms/step - loss: 0.2121 - accuracy: 0.9196
- val_loss: 0.3762 - val_accuracy: 0.8368

Epoch 4/5

313/313 [=====] - 24s 77ms/step - loss: 0.1702 - accuracy: 0.9371
- val_loss: 0.4206 - val_accuracy: 0.8308

Epoch 5/5

313/313 [=====] - 24s 76ms/step - loss: 0.1339 - accuracy: 0.9547
- val_loss: 0.4639 - val_accuracy: 0.8328

782/782 [=====] - 13s 17ms/step - loss: 0.4758 - accuracy: 0.8298

Test loss: 0.4758, Test accuracy: 0.8298